FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

Member ABC

MARCH, 1944

Vol. 97. No. 3

Lumber Yard Fire in New York City Extends to Adjoining Buildings, Resulting in a Four-Alarm Blaze

A CASE - SHEPPERD - MANN PUBLICATION

THANKS TO THE
FIRE DEPARTMENT RESUSCITATOR
We're Still Together

Yes, **THANKS**

To the Foresight of the CHIEF and His

EMERSON RESUSCITATOR

MORE and more, fire departments are being called on in emergencies involving human life and more and more lives are being saved through the foresight of chiefs who provide in advance for the inevitable.

Asphyxia is present in many forms — smoke suffocation, electric shock, drowning, carbon-monoxide poisoning — any one of which may face you on your next alarm.

Prepare now for this emergency by providing the best resuscitator available. Lives of your citizens or men may depend on your decision.

★ *Write for further data or a demonstration before your department.* ★

J. H. EMERSON COMPANY

Representatives in Principal Cities

22 COTTAGE PARK AVENUE • CAMBRIDGE, MASS.

One of Cleveland's 13 new pumpers—built by Buffalo Fire Apparatus Corp. —equipped with FEDERAL Sirens.

THIS ASSURES GREATER SAFETY

Your valuable apparatus will be assured greater safety when you equip with FEDERAL Sirens.

There is a model for every type of service and for every condition—coaster sirens, double coaster sirens—with or without flashing red light—with or without brake—in any combination which best fits your individual requirements.

FEDERAL Sirens are backed by more than 40 years of signal engineering. They contain many exclusive features. They are constructed to give instant and dependable service—to assure greater safety for your valuable apparatus.

Write for bulletins today! Learn more about the new and outstanding siren developments by FEDERAL!

The FEDERAL Fury Exhaust Whistle is available as a warning signal in those communities which still prohibit the use of sirens under wartime conditions. Two new models of oscillating lights are also available for additional protection by a visual signal.

FEDERAL ELECTRIC CO., INC.

SIREN HEADQUARTERS

8702 So. State Street Chicago 19, Illinois

FIRE ENGINEERING

A Consolidation of Fire and Water Engineering, The Fire Engineer and Fire Protection

CONTENTS

Vol. 97 March, 1944 No. 3

	Page
With the Editor By Fred Shepperd	139
Fire Fighting Methods in Italy and Africa By Major Fred K. Shirk	141
Practical Training for Auxiliary Firemen By Fred Shepperd	143
Important 1943 Higher Court Firemen Decisions By Leo T. Parker	146
Airport Crash Fire Truck Demonstrated at Washington	148
With Our Readers	149
Questions and Answers	150
The Watch Desk	151
The Round Table Estimating Losses to Buildings and Contents by Fire	152
False Alarms	154
Walkie-Talkie Seen as Weapon Against Crime and Fire	156
Interesting Heat Phenomena at Dallas Magnesium Fire	158
Preventing Tank Explosions During Rescue Operations By Deputy Chief Joseph J. Davis	162
What's Burning	168
Convention Dates	170
Manufacturers' Announcements	172
Warfare	174

FRED SHEPPERD
Editor

Buy Apparatus Now!

UNUSUAL interest has been taken in the leading editorial "Purchase Your Apparatus Now," which appeared in the February issue of FIRE ENGINEERING, wherein Fred Shepperd pointed out five specific reasons why it is so important for fire departments to get busy immediately in bringing their equipment up to par.

- That this is sound and timely advice is evidenced from the large number of requests we have received for reprints of this constructive editorial. (If you missed seeing it, let us know and we shall be glad to place a copy in your hands.)

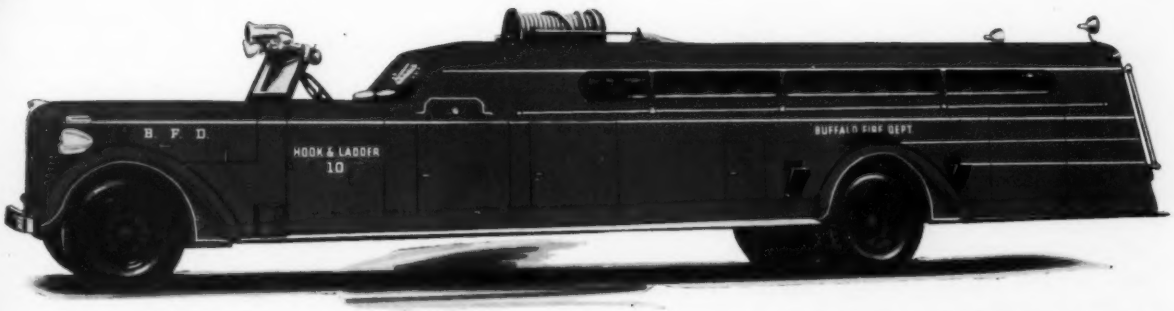
- Just another example of the outstanding editorial leadership that FIRE ENGINEERING has enjoyed for so many years in behalf of the fire fighting profession and the fire industry!

The Publishers

FIRE ENGINEERING

The Journal of the Fire Profession since 1877; published on the fifteenth of each month by Case-Shepperd-Mann Publishing Corp., 24 West 40th St., New York 18, N. Y., also publishers of *Water Works Engineering, Sewage Works Engineering*, etc. ¶Subscription price U. S. and Latin America, $2 a year; Canada, $2.50; Foreign, $3; Single copies, 25c. ¶Member of Audit Bureau of Circulations and Associated Business Papers, Inc. ¶Entered as second-class matter April 15, 1929, at the Post Office at New York, N. Y., under Act of March 3, 1879. ¶Contents of this issue copyrighted, 1944, by Case-Shepperd-Mann Publishing Corp. ¶KARL M. MANN, President; I. HERBERT CASE, Vice-President and General Manager; FRED SHEPPERD, Secretary and Editorial Director; W. J. GIBSON, Eastern Representative; WM. H. TOPHAM, Circulation Manager. CHICAGO OFFICE: W. S. CLEVENGER and L. M. ROCHE, 6 No. Michigan Ave., Chicago 2, Ill.; SAN FRANCISCO: CHARLES H. WOOLLEY, 605 Market Street, San Francisco 5, Calif.; LOS ANGELES: AUGUST HAURIN, 6000 Miramonte Blvd., Los Angeles 1, Calif. ¶Printed in U. S. A.

A CASE-SHEPPERD-MANN PUBLICATION
"Specialized Leadership"



Buffalo 1000 gallon Quadruple Combination recently delivered to the city of Buffalo.

SAFE

COMPLETE VISION WINDSHIELD

★ ★ ★

BUFFALO FIRE APPLIANCE CORPORATION

BUFFALO . . . . NEW YORK

● Ward LaFrance fire apparatus is the pride of fire stations in the nation's biggest cities, and in small town volunteer fire houses by the hundred.

If you want to win friends among firemen, you couldn't make a better start than to give 'em just *half* a chance to tell you what they think of their Ward LaFrance vehicles.

Decide to investigate Ward LaFrance equipment for your own department. Right now is an excellent time to do just that.

Ward LaFrance

TRUCK DIVISION, GREAT AMERICAN INDUSTRIES, INC.

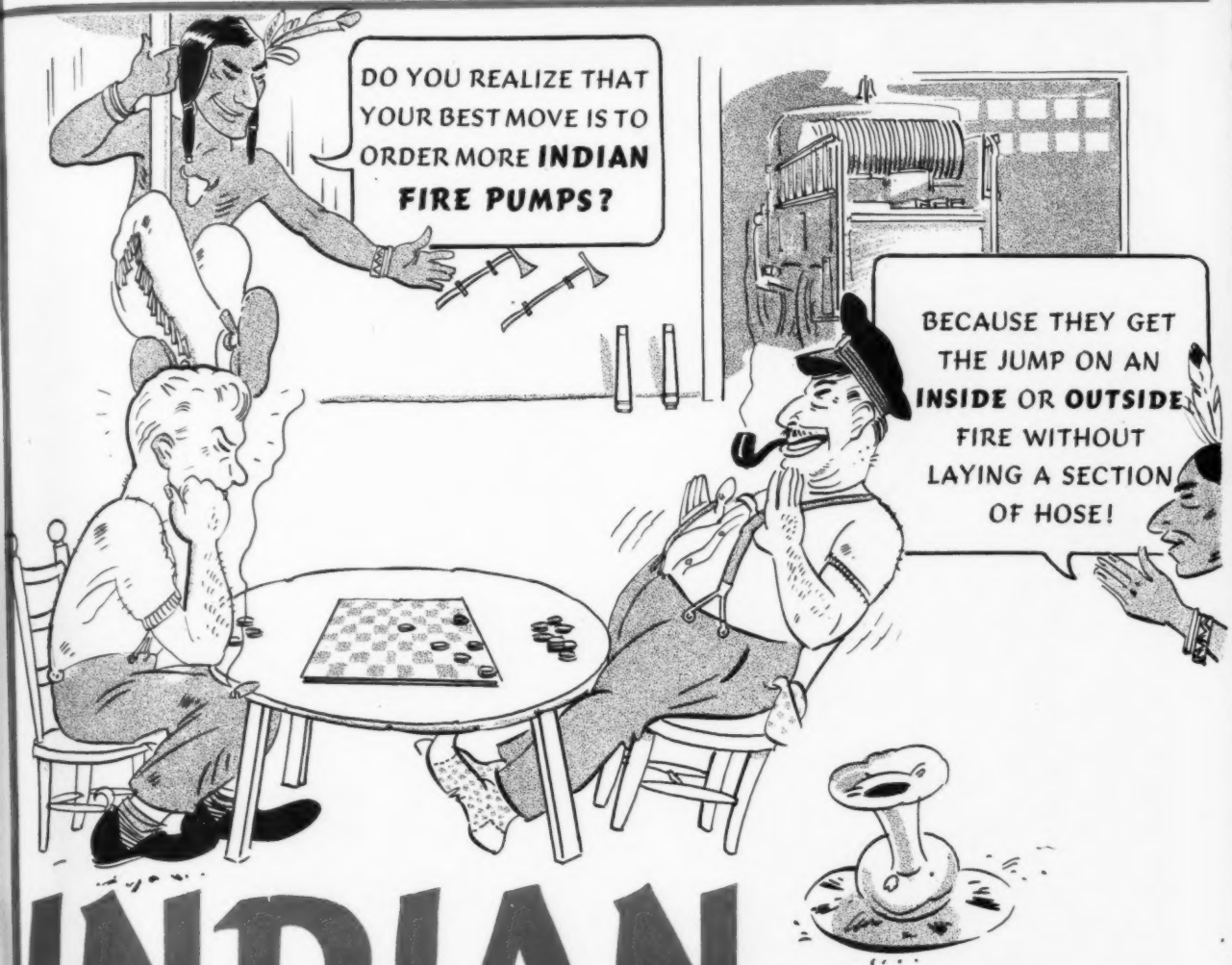
ELMIRA, GAI **NEW YORK**

Quick Facts: **A complete line of eleven basic models of six cylinder pumpers and ladder trucks from 112 to 235 H.P. . . . 500 G.P.M. pumpers on Ward LaFrance chassis will not be available until WPB restrictions are lifted.**

© 1944 *Great American Industries, Inc., Meriden, Conn.*

It will help if you will mention FIRE ENGINEERING *when writing advertisers*

FIRE 'N PUMP *The "Injun" House Twins* By D. B. SMITH & CO.


DO YOU REALIZE THAT YOUR BEST MOVE IS TO ORDER MORE INDIAN FIRE PUMPS?
BECAUSE THEY GET THE JUMP ON AN INSIDE OR OUTSIDE FIRE WITHOUT LAYING A SECTION OF HOSE!

INDIAN FIRE PUMPS

Are your best means of controlling outside *and* inside fires in the early stages!

Just keep the big 5 gal. tank continually filled with clear water. Tank carries slung on back allowing operator to move about quickly in fighting the fire without having to stop and pick up the extinguisher.

The *INDIAN FIRE PUMP* is one of the most effective pack pumps available during war time for the quick control of *all* fires before they spread!

Rural Townships should organize Voluntary Fire Fighting Units and equip them with Indian Fire Pumps. Boroughs and other Townships having organized Fire Departments should equip their units and be prepared to combat field fires as well as fires on roofs, in rubbish, in buildings and homes. Indian Fire Pumps will save wear and tear on regular equipment.

STANLEY MESAVAGE, Chief,
Luzerne County FFFS

Note the word *ALL* in above letter from Chief Mesavage. *INDIAN FIRE PUMPS*, using nothing but clear water, will put out *inside* fires just as well as they do *outside* fires. This is highly important and makes these famous fire pumps doubly valuable.

D. B. SMITH & CO. • 406 Main Street • UTICA, N. Y.

Pacific Coast Branch: Hercules Equipment & Rubber Co., 435 Brannan St., San Francisco, Cal.

Roy G. Davis Co.
617 E. Third St.
Los Angeles 13, Calif.

Carco-Conwhit Co.
520 S.W. Pine St.
Portland 4, Oregon

The Conwhit Co.
Klamath Falls,
Oregon

Mill & Mine Supply Co.
2708 4th Ave. South
Seattle, Wash.

Let's "dig" the carbon out of motors too!

Coal is a form of carbon precious to mining men—but they have learned, as fire engineers have, that hard, black carbon on rings, pistons, valves is a destructive and wasteful thing.

Macmillan RING-FREE Motor Oil *removes* carbon while the engine runs! The result is a cleaner, more thoroughly lubricated, sweeter running engine. And continued use of RING-FREE keeps carbon in check.

Furthermore, RING-FREE Motor Oil reduces friction *fast!* Internal engine friction is reduced to the extent that it's measurable in fuel savings as more power is delivered to the drive shaft. The fast penetrating quality, high film strength, high heat resistance and long cling to metal of Macmillan RING-FREE—contributing to reduction of friction—cuts down wear and repair. It pays to improve the performance and lengthen the life of all types of Diesel and gasoline engines with RING-FREE!

Quoting the MORRIS COAL & MINING COMPANY, Morris, Ill.: "...a Diesel Ten-Yard Drag Line... was causing expensive delays because of carbon and sludge conditions and stuck rings...and we decided to experiment with RING-FREE Motor Oil.

"The following eleven months, this Diesel operated continuously, day and night without one single shutdown for motor repairs. At the end of eleven months the motor was torn down and inspected. This revealed... no sticky rings, hard carbon, or sludge. Naturally with that kind of performance we have continued to use RING-FREE and have had no costly delays for mechanical repairs."

MACMILLAN PETROLEUM CORPORATION

50 W. 50th Street, New York 20 • 624 S. Michigan Avenue, Chicago 5 • 530 W. 6th Street, Los Angeles 14

Copyright 1944 Macmillan Petroleum Corp.

MACMILLAN RING-FREE MOTOR OIL

REDUCES WEAR BY REDUCING FRICTION

ILLUSTRATED BELOW, CANTON, MASS., FIRE DEPARTMENT
TYPE 45 TRIPLE COMBINATION PUMPING ENGINE

You never know how big the fire is until you get there. But when you're heading there in a Mack, you know that you've got the equipment to put it out . . . whether it's a burning mattress or a blazing factory. You know you can depend on Mack Fire Apparatus . . . as America's firemen have depended on it for more than three decades!

MACK MANUFACTURING CORPORATION, FIRE ENGINE DIVISION
Empire State Building, New York 1, N. Y.

BUY WAR BONDS

IF YOU'VE GOT A MACK, YOU'RE LUCKY . . . IF YOU PLAN TO GET ONE, YOU'RE WISE!

Mack
FIRE APPARATUS

If your community needs additional fire-fighting equipment or replacements, think of Mack. Remember, Mack Fire Apparatus is backed by the greatest engineering resources in the industry.

We shall appreciate your mentioning FIRE ENGINEERING *when writing advertisers*

"AKRON BRASS"

MULTIVERSAL NOZZLE

An automatic fire fighter that once put into action needs no further attention — releasing needed manpower for duties at other points.

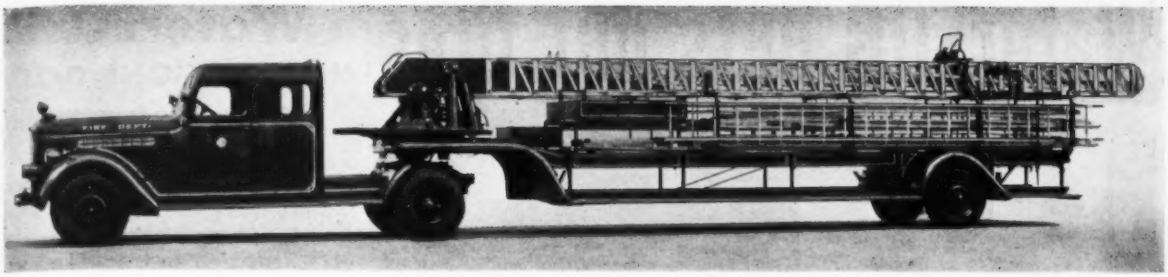
The Akron Multiversal Nozzle is a one piece unit ready for action as soon as hose lines are connected. In position and under pressure it plays a stream without attention, as long as necessary. Remarkably flexible. Nozzle turret, operating on ball bearings, swings in a complete circle and allows stream to be directed up or down — from an elevation of 90° to 30° above horizontal.

AKRON BRASS MFG. COMPANY, INC.
WOOSTER, OHIO

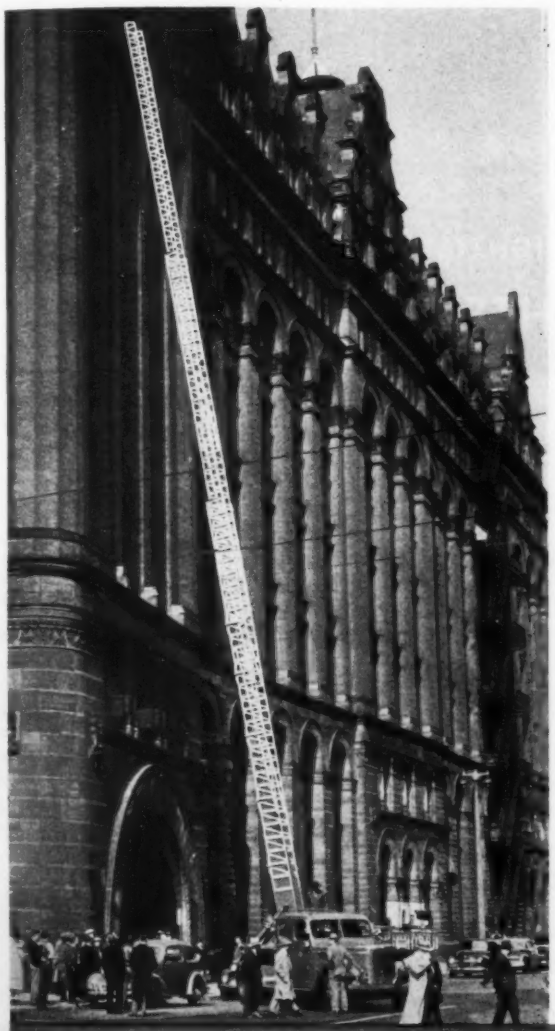
Deck-pipe type Multiversal Nozzle now in operation on Coast Guard patrol boats.

AKRON BRASS

FIRE FIGHTING EQUIPMENT



Milwaukee's HOME FRONT *is backed by* PIRSCH



CITY OF MILWAUKEE

now has 2-100' Pirsch Hydro-Mechanical aerial ladder trucks and 2-1250 gallon Pirsch pumping engines in service with one 65' aerial and an additional 1250 gallon pumper on order.

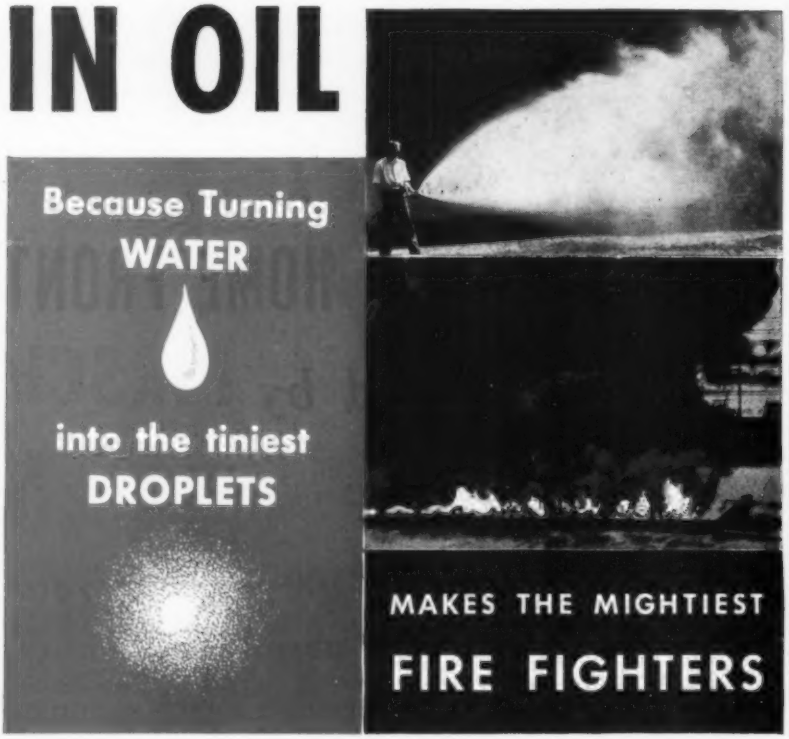
The Pirsch all-metal (aluminum alloy) aerial ladder is now available in 65' to 100' sizes.

If you want the best in metal ladders buy the Pirsch aluminum alloy lattice girder aerial ladder.

PETER PIRSCH & SONS CO. KENOSHA, WIS.

"BUILDERS OF AMERICA'S FIRST ALL-POWERED AERIAL LADDER TRUCK AND AMERICA'S FIRST 100' AERIAL LADDER"

WaterFOG puts out fires IN OIL



The smaller a water droplet is, the quicker it will absorb heat from fire.

That's why WaterFOG makes water effective on oil fires. Its water particles are so tiny — having many times greater surface area than an equal amount of water in spray or stream form—that they cool the fire faster.

Also, being lighter, WaterFOG floats in the combustion area, picking up its full complement of heat from the burning vapors and from the liquid's surface. Then, as it changes to steam, it expands, casting a smothering blanket over the fire.

The fire is quenched . . . vaporization is retarded . . . oxygen is kept out. Yet there is no agitating of the liquid, no spreading of the fire. "Flash-back" is prevented, and with smaller quantities used, water damage is restricted. Write for Bulletin 123.

WaterFOG is created by specially-designed Rockwood heads and nozzles, in which impinging streams break water up into FOG. Rockwood engineers will develop the proper particle size, fog pattern and velocity for your conditions. Available in the form of fixed piping installations, hose nozzles and applicators.

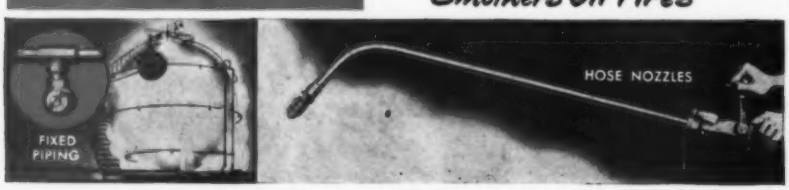
Approved by Underwriters' Laboratories and Associated Factory Mutuals — used by Navy, Coast Guard, U. S. Maritime Commission, hundreds of industrial plants.

Executives! A color movie (16 mm.) showing tests of Rockwood WaterFOG is available.

ROCKWOOD SPRINKLER COMPANY
54 Harlow Street, Worcester 5, Mass.
Specialists in Fire Protection Engineering, Equipment and Installation since 1907

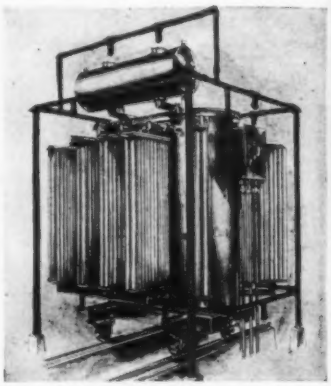
ROCKWOOD WaterFOG

Water Engineered by Rockwood Cools. Confines. Smothers Oil Fires



WaterFOG INSTALLATIONS DOOM ELECTRICAL FIRES!

Full protection against flammable liquid fires is obtained when a WaterFOG system of fixed piping, heads, valves and automatic controls is planned and installed by Rockwood WaterFOG engineers (authorities on hydraulics, as applied to fire protection). Spacing of heads, obstructions, distance between heads and hazard, etc. are important in determining correct particle size, fog pattern and velocity.



Typical installation of Rockwood WaterFOG on transformer. WaterFOG is safe to use on electrical fires!

Typical WaterFOG Applications

- quench and dip tanks
- paint shops
- control rooms
- oil switches
- dryers
- oil storage

etc.

WaterFOG Nozzles for Hose Lines

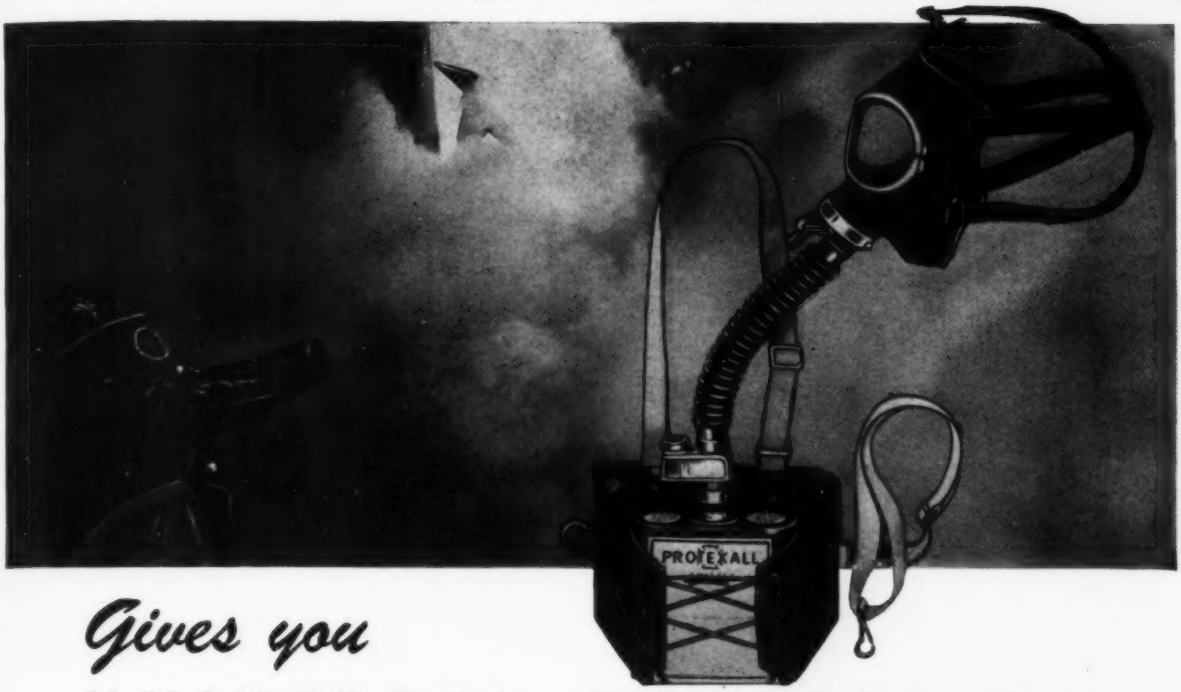
Rockwood N22 nozzle, attached to ordinary hose lines or used as a tip on play-pipes, converts water into WaterFOG, discharging a large WaterFOG pattern with considerable forward projection. Since the WaterFOG has a very low degree of conductivity, it is safe for fighting fires in oil-filled electrical equipment. Available in 1", 1½" and 2½" sizes.

Rockwood N22 Nozzle

Write for Bulletin 123, giving more complete information on WaterFOG equipment.

EXECUTIVES! A colored movie (16 mm.) showing tests of Rockwood WaterFOG, is available.

THE PROTEXALL GAS MASK



Gives you
UNIVERSAL PROTECTION
from all Fire Gases

Death lurks in the engulfing surge of toxic, gaseous fumes and smokes.

For safety's sake use the protection of the Protexall Gas Mask. It is approved by the U. S. Bureau of Mines for respiratory protection from acid gases, organic vapors, ammonia, carbon monoxide, and toxic smoke when there is sufficient oxygen present to support life.

Here are some of its important features:

- Gas-tight facepiece fits any face.
- Large contoured lenses give Full-view vision.
- Lenses of shatter-proof safety glass, are detachable, non-fog.
- Head harness is comfortable and readily adjusted.
- Exhalation valve of simple design—no seat to corrode, or get out of alignment.
- Metal guard protects valve from injury.
- Non-collapsible, flexible corrugated tube.
- Timer tells duration Mask can be safely used.
- Canister reduces resistance to breathing to minimum.

This Protexall Gas Mask is furnished in a strongly constructed, metal reinforced fibre case, built to withstand moisture and hard usage. Each mask is supplied with a spare canister. Write for illustrated literature.

AMERICAN-LAFRANCE-FOAMITE CORPORATION
Most Complete Line of Fire-Fighting Equipment.
ELMIRA, NEW YORK U.S.A.

KLEERLINE COUPLINGS

YES, KLEERLINE COUPLINGS are *built to do the job.* These modern, sturdy, streamline couplings make for faster coupling-up.

KLEERLINE COUPLINGS can't possibly catch on obstructions as did the old pin lug coupling.

KLEERLINE COUPLINGS won't wear nor tear hose the way the old pin lug coupling did.

KLEERLINE COUPLINGS have clean cut, sturdy threads—longer life.

KLEERLINE SPANNERS will fit ANY coupling.

Ask your dealer to show you
KLEERLINE COUPLINGS and KLEERLINE SPANNERS.

"KLEERLINE Couplings are made by a firm with a reputation for precision manufacturing over a period of 30 years.

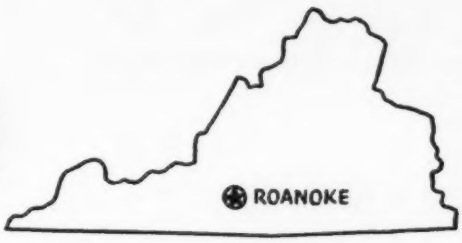
INQUIRIES INVITED FROM RESPONSIBLE DEALERS IN FIRE EQUIPMENT

ANDERSON FIRE-FIGHTING EQUIPMENT COMPANY, INC.

407 WEST 36th STREET, NEW YORK 18, N. Y.

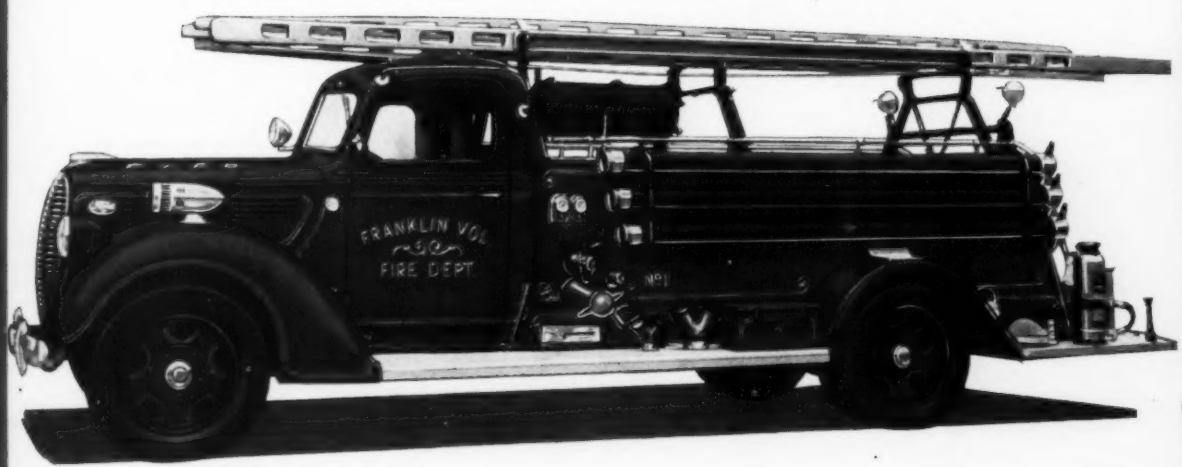
Phone MEdallion 3-3200

OREN



VIRGINIA'S ONLY
FIRE TRUCK MANUFACTURER

Serving Our Country Today!
Better Equipped to Handle the
Needs of Your Department Tomorrow!



A Triple Combination OREN built for Franklin Volunteer Fire Department, Franklin, Virginia

★ OREN builds a complete line of FIRE TRUCKS ★
—Write for full information.

OREN FIRE APPARATUS COMPANY

ROANOKE, VIRGINIA

A.D.T

Electric Protection Services

FIRE • BURGLARY • INTRUSION • HOLDUP • SABOTAGE

American District Telegraph Company (A.D.T. System) is the only nation-wide organization specializing in electric protection services. A.D.T. manufactures and installs electrical protection systems to safeguard lives and property against the hazards of fire and unlawful intrusion. Systems also are provided for the supervision of watchmen and guards and of certain industrial processes. The protection equipment within each customer's premises is connected with an A.D.T. Central Station where skilled attendants stand constant vigil and respond to alarms by dispatching armed and bonded private guards, the police, the fire department, or by initiating whatever other action may be required by the nature of the emergency. In localities where Central Station service is not available, the protection system usually may be connected to the local police or fire department.

FIRE PROTECTION SERVICE

- ***Sprinkler Supervisory and Waterflow Alarm:*** Automatically detects and reports trouble conditions (whether caused maliciously or otherwise) that might impair the sprinkler's effectiveness. Automatically summons the fire department the instant a sprinkler head opens or in case of a serious leak.
- ***Aero Automatic Fire Alarm:*** (For unsprinklered areas, or in conjunction with sprinklers.) Automatically detects fire when it starts, and automatically summons the fire department.
- ***Manual Fire Alarm:*** Available in various types—for summoning the fire department, for sounding local alarms to warn occupants, or performing both functions.
- ***Automatic Fire Control for Air Duct Systems:*** Provides automatic fire and smoke detecting and reporting devices for air conditioning, ventilating and other air duct systems. Automatically closes dampers, stops fans, etc., and summons the fire department.

INTRUSION DETECTION SYSTEMS

- ***Burglar Alarm:*** Protection for doors, windows, skylights, etc., by means of electrified screens, foils and similar devices.
- ***Holdup Alarm:*** Provides means for transmitting a silent signal to summon police in case of holdup or other emergency.
- ***Invisible Ray Alarm (Photoelectric):*** Projects beams of invisible light across indoor or outdoor areas. Interruption of beam by any person or vehicle results in an alarm.
- ***Telapproach:*** Establishes an electronic field and produces alarm upon approach of any person into the electrical field.
- ***Phonetalarm:*** A sound detection system especially adaptable for protection of vaults containing valuables such as specie, securities, confidential plans and documents, narcotics, gauges, tools, etc.
- ***Emergency Police Call:*** Provides means for summoning police direct to premises in case of emergency.

PATROL SUPERVISION FOR WATCHMEN AND GUARDS

- ***Central Station Watchman's Reporting Service:*** Provides signaling stations electrically connected to the A.D.T. Central Station to which the watchman reports at prearranged intervals. Failure to signal is immediately investigated.

OTHER A.D.T. SYSTEMS

- ***Heating System Supervision:*** Electrically supervises temperature, flame failure, oil supply, vacuum, pressure, humidity, current supply, pilot safety, automatic stoker. For coal, gas or oil fired systems.
- ***Industrial Process Supervision:*** Electrically supervises temperature, humidity, power, water supply, etc., in various industrial processes such as mixing, cooking, drying, cold storage, etc.

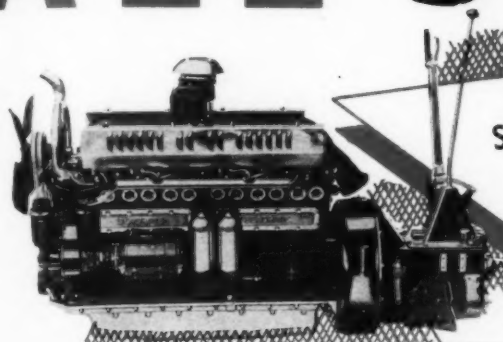
The benefits derived from A.D.T. Protection are far-reaching....May we tell you how it can benefit you? Write our Executive Offices, 155 Sixth Avenue, New York, N.Y., for free descriptive booklets.

A.D.T

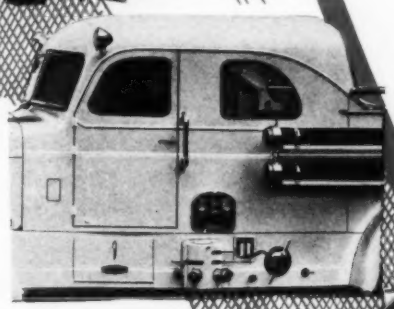
Controlled Companies of **AMERICAN DISTRICT TELEGRAPH CO.** *155 Sixth Avenue, New York, N. Y.*

CENTRAL STATIONS IN ALL PRINCIPAL CITIES OF THE UNITED STATES

ALL Seagrave



SEAGRAVE
Built
Motors



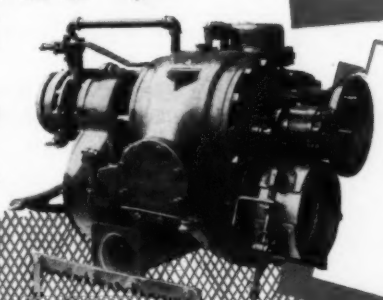
SEAGRAVE
Built
All-Steel Bodies

When you buy a Seagrave you get fire apparatus that is made exclusively for fire protection and for no other purpose. . . . Frames, bodies, motors, ladders, pumps and other major parts are built in the Seagrave factory. . . . Designed by Seagrave engineers and constructed by Seagrave's highly skilled mechanics.

SEAGRAVE
Built
Safety Steel Aerial
Ladders

A Seagrave is ALL Seagrave . . . that's why it has the stamina to stand up under the most adverse conditions . . . that's why it gives years and years of dependable, trouble-free service.

THE SEAGRAVE CORPORATION
COLUMBUS, OHIO
Bickle-Seagrave, Ltd. Woodstock, Ont.



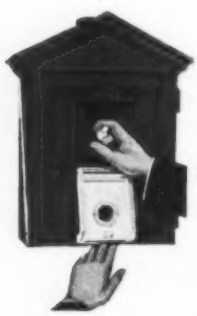
SEAGRAVE
Built
Centrifugal Pumps

SEAGRAVE

THE GREATEST NAME IN FIRE APPARATUS

"DAM .... the FIRE LOSS"

Make Your POST WAR PLANS *with this in mind!*



Inadequate fire defense is indicated when a citizen must traverse a greater distance to send an alarm than is required by the recognized standard of box distribution.

ALL records show that fire losses are caused in most cases by delayed alarms—such losses, in the pre-war period (1919-1939) amounted to more than 8½ billion dollars and took more than 200,000 human lives.

The continuation of such losses in the post war era will impose a heavy burden on an already overburdened country, and will easily hamper the quick reconstruction that will be so vital to our country's welfare.

Such a burden, locally, will handicap any efforts to strengthen your department and to reduce fire losses. Delayed alarms can be greatly eliminated by the installation of adequate additional alarm boxes. Your plans for these additional safety measures should be adequate and effective and should be included in any municipal program for post war improvements.

Our 75 years of experience, in the field of fire alarm signalling, is freely placed at the disposal of every fire chief—let us help you make your Post War Plans.

THE GAMEWELL COMPANY

Newton Upper Falls, Massachusetts

FIRE ENGINEERING

MARCH, 1944 VOL. 97. NO. 3

With the Editor

Fire Alarm Improvements There has been little opportunity to make fire alarm improvements during the past year, for munitions manufacture has required every pound of critical metals available, and war industries have kept wire and cable manufacturers operating at peak capacity to supply military and naval needs alone.

Since the first of this year a gradual improvement in the situation has been taking place. Today manufacturers of fire alarm equipment report no serious difficulty in obtaining all the materials they need for building fire alarm boxes and other items of equipment.

While there is still a serious shortage of wire and cable, the War Production Board has agreed to approve requests for priorities for cable and wire to make extensions of existing systems, especially in critical areas.

Priority approval can be secured today for fire alarm boxes needed to replace unserviceable ones, or for additional boxes, when there is real need for them and where but little fire alarm cable would be required for their installation. Priorities for replacement of central station equipment parts which have become inoperative can also be secured.

Thus needed improvements, though not including major changes, are now possible in fire alarm signalling systems.

Because of the growing fire losses throughout the nation, and particularly in vital defense industries, and the pressing need for dependable emergency signalling systems, fire departments are urged to make such improvements to their fire alarm systems as are permitted.

The WPB has relaxed its former stringent restrictions on fire alarm equipment manufacture sufficiently to enable a fire department to recondition its system and to make urgent extension and add needed boxes.

Some More Junk for The Fire Service? On February 18, 1944, the Office of Civilian Defense issued a notice to Regional Directors of that organization pointing out that the War Department was turning over to the Treasury Procurement Office a large number of used cargo vehicles (Army trucks) of Model 1939 and before. These trucks are classed as "uneconomical for repair," and are to be sold "as is."

The OCD states that these vehicles may be purchased for civil defense organizations, and proceeds to tell them how to go about procuring the units.

As the subject of the notice referred to above is "Additional Information Regarding Surplus Army Trucks for Mounting Office of Civilian Defense Auxiliary Fire Equipment," it is apparently intended that these used vehicles be employed for carrying front mounted and skid pumps.

Our first impulse is to ask if the fire service has not already enough junk on its hands without accepting more. Our second is to inquire what bright young man, or men, in the OCD conceived the idea of making fire apparatus out of used Army trucks that are "uneconomical for repair."

Before the advent of the OCD, it was generally believed that the fire service de-

served nothing but the best in the way of fire fighting equipment. But the OCD seems to be working under the illusion that the fire service can get along with any old junk that's available.

We wonder if the OCD has anyone among its policy makers who has stood by and watched a fire engine pump continuously under full load at a large fire for days at a stretch; who has seen an engine labor without interruption under a staggering load of large flow at high pressure; who has noted the unfaltering service it must give.

We do not believe it has such a person, for none but those entirely ignorant of the fire service would suggest the use of discarded Army trucks for carrying and operating fire pumps.

Front mounted pumps as built today are dependable and efficient, but they need dependable motors to drive them. And we do not believe the motors on wornout Army trucks can be classed as dependable.

It would seem far better to put these used and abused units to work in other fields, such as garbage collection, park department maintenance and street maintenance, where occasional breakdown would not endanger lives nor property exposed to fire.

Either there is woeful ignorance of the needs of the fire service at Washington, or else fire fighting as a public service is held in mighty low esteem among civilian defense officials in the nation's capital.

Consistency? Mayor F. H. LaGuardia of New York City recently ordered the members of the Fire Department to work three additional eight-hour shifts every twenty days, and he offered them a rate of pay for the overtime that was eleven cents an hour less than their regular scale. The firemen refused to accept this chiseled pay rate.

The Mayor then declared that an "emergency" existed, and ordered the firemen to serve the additional time without any increase in pay whatsoever. The "emergency" was the shortage of firemen, due to retirements, enlistment and other causes.

The firemen then took the matter to court. And now the selective service draft officials, apparently at the request of the Mayor, have cancelled a previous recommendation that all firemen with more than two years of service be deferred.

The police force, given the same increase for the same number of additional hours duty, accepted the proposition. They still receive deferment from military draft.

It seems to us the action of Mayor LaGuardia with regard to the firemen shows more than a little vindictiveness. It smacks of the old "rule or ruin" philosophy.

Fred Shepperd

Fire Fighting Methods in Italy and Africa

By MAJ. FRED K. SHIRK*

DURING the past two or three years the Fire Depts. throughout the U. S. have been organizing to combat any possible incendiary attacks. Some experiences of overseas fire fighters should be of interest and possible help to the "folks on the home front."

In the past year and a half I have had the opportunity to observe both military and civilian fire departments in England, North Africa and Italy. Over a year ago I wrote an article on the National Fire Service of the United Kingdom, which was published in FIRE ENGINEERING. At that time I pointed out that the principle features of a fire service capable of combating a "blitz" are:

1. Fire watchers and fire bomb parties.
2. Emergency (static) water supply.
3. Auxiliary fire apparatus (trailers).
4. Dispatch riders.

My contacts and experiences since leaving England have proven to me that those four points, in the order named, are the keys to successful fire defense.

Any area subject to incendiary attacks must have fire watchers to watch for falling incendiaries and fire bomb parties to attack such bombs that may cause fire. England learned that the only way to avoid conflagrations was to require that buildings have watchers posted nightly. Civilians (men and women) do a number of compulsory tours per month. In areas less subject to incendiary attack than the English cities, it is necessary to have watchers and details on duty only during attacks. It is usually a physical impossibility for any Fire Department to combat the large number of incendiary bombs dropped, therefore reliance must be placed upon watchers and fire bomb parties, the fire department responding only to such blazes as cannot be controlled by the fire bomb parties.

Static Water Supplies

Emergency (static) water supplies are the only reliable source of water. Heavy bombings invariably destroy the normal supply and may also damage emergency surface mains. Throughout the major cities I have visited are located water tanks with capacities ranging from a few thousand gallons to several hundred thousand gallons. These tanks provide a ready source from which fire pumps may draft water. If need be, relays may be laid from the large tanks or unlimited sources to supply the smaller tanks or the portable canvas tanks that may be set up. The portable tanks enable several small trailer pumps at a fire to be supplied by a heavy duty, large capacity pumper at the water source.

Trailer fire fighting equipment is most useful in built up areas where streets become impassable due to debris. An extensive emergency static water supply system is a prerequisite to efficient trailer pump operation. The best trailer pump I have seen is the Dennis 350/500 gpm turbine (cent.) pump with a piston pump primer. This pump is light enough to be readily manhandled by several men. Its disadvantage is that it requires a tender (hose-wagon) to carry most of its equipment, for the trailer holds only a few lengths of hose and other appurtenances.

The American made medium trailer pumps in use over here have certain refinements over European pumps. They have the advantage of being self-contained, all the hose and appurtenances being carried right on the trailer, thereby not tying-up a truck except as such times as the trailer requires movement. However, the weight of all this equipment makes it virtually impossible to manhandle the trailers over debris. However, once the American trailer is on the fire grounds I prefer it, for the heavy duty motor and American rubber lined double jacket hose make possible higher pressures.

Portable Pumps Valuable

The lightweight portable pumps have proved very valuable. They can readily be carried over debris or other obstructions and placed in positions inaccessible to other pumps. They are very useful in handling small fires on ships and around the waterfront. Narrow streets and alleys of old cities of the Mediterranean prevent the use of anything larger than portable pumps, while the small capacity water mains eliminate the need for larger pumps.

However, the value of the triple combination must not be overlooked. The small or medium pumpers with large capacity booster tanks and the large capacity pumpers both have their uses. In areas where water is scarce, the danger of bombing slight, the conflagration hazard negligible, or for any other reason it is considered unprofitable to build emergency static water tanks, the large capacity booster tanks are the answer. In Northwest Africa the civilian fire apparatus invariably have large booster tanks. Some with a capacity as great as a thousand gallons. Here, as in the Middle East, American triple combinations with 150 to 300 gallon booster tanks proved superior in all around fire fighting qualities to the trailer pumps.

Foreign Fire Department Equipment

Engine Company of a Northwest African city showing the heavy duty pumper, mounting a six-cylinder piston pump of over 1200 gpm capacity in rear and carrying two removable hose reels. The hose wagon is equipped with a monitor (turret) nozzle and carries large capacity (approximately 4½-inch diameter) unlined canvas hose.

Communications a Problem

Probably the most difficult problem to surmount when a fire department finds itself with a "Blitz" on its hands is communications. As mentioned before, all other contingencies have been taken care of: fire watchers and fire bomb details are on duty, emergency water supply sources are available, the necessary trailer and auxiliary pumps supplement the regular fire apparatus. Yet all these arrangements cannot function efficiently if communications fail, which does happen upon occasion.

The motorcycle dispatch rider appears to me as the best solution. Two-way radio may be a more scientific answer, but at present it appears impractical.

*Major Shirk, an officer in the U. S. Corps of Engineers, has been abroad since practically the beginning of hostilities, and has had unusual opportunity to study fire fighting apparatus and methods employed in England, Africa, Italy and the Near East. His first article in this journal discussed British fire apparatus and procedure; this one is devoted to African and Italian observations.

In addition to technical limitations it is not desirable to clutter up the ether with a lot of non-military talk. Finally, I don't believe that a sufficient number of radios could be made available under present conditions. The dispatch rider precedes the apparatus to the fire. If he finds the normal fire route blocked by debris he can back-track to the nearest intersection and after informing the apparatus of the road block, he can scout around for another route. Upon arrival at the fire, he is the means of communication with the fire headquarters, or control center, should the normal means of communication fail.

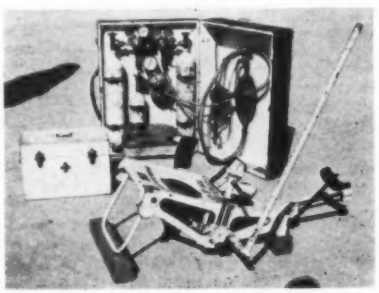
The weakest point in this system is that there is so seldom the need to use it. On any fire the emergency water supply and/or the auxiliary fire apparatus may be used. On every alert the fire watchers are on duty, and during each incendiary attack the fire bomb details have the opportunity to work, but it is only in that great emergency when regular sources of communication have failed that the dispatch riders are called upon to carry out their mission. Therefore, it behooves fire officers to make use of their dispatch riders even when not absolutely necessary so that the officers may be sure the riders function smoothly.

Firemen Well Trained

The professional firemen I have met are generally well-trained, efficient workers. In Africa much stress is placed upon physical fitness, gymnastics being a popular sport. Another point that impresses me is the excellency of the first aid training, and the completeness of the medical equipment carried. Despite the political unrest in both Africa and Italy, the large municipal fire brigades have been able to maintain a high standard of personnel.

The civilian fire departments in both Europe and North Africa are normally concentrated in a few large stations.* Usually the headquarters stations in large cities contain extensive repair and shop facilities. In one African station I visited they had woodworking and metalworking shops, a complete automotive repair shop, and a hose repair shop. In addition, this station had a complete gymnasium and a basketball court.

Fire ground technique varies considerably from U. S. practice. In both Europe and Africa most fire streams are



Artificial Respiration Devices Carried by a Northwest African Fire Department.. Note Hand Operated Mechanical Respirator

light. Small tips (5/8" or 3/4") are often used and engine pressure seldom exceeds 100 lbs./sq. in. The English generally use a 2½" instantaneous snap coupling with a 2¾" unlined canvas hose in 75' and 100' lengths. The practice is to carry each length rolled, female end in the center, one fireman being required to lay each length. The hose lengths are laid with male ends towards the pump, the reverse from U. S. practice, as discharge gates are female and play-pipes are male. Where two lines are desired, often only a single line is laid from the pump and this line is branched with a wye at the fire. Shutoff nozzles are not in general use, fog or spray nozzles are almost unknown, while mechanical foam nozzles, both of the pack and in-line types, are used extensively.

Bayonet Couplings

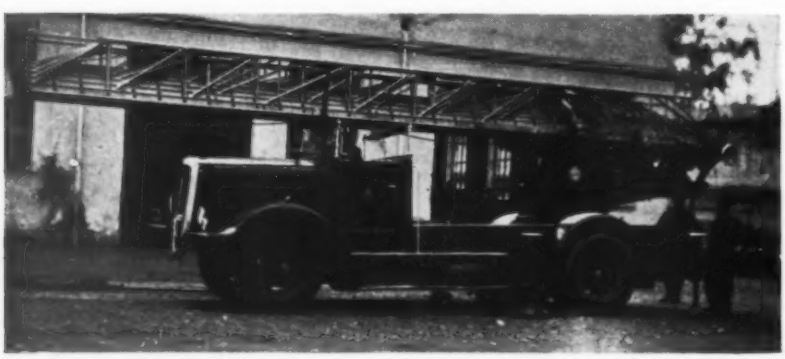
The French type bayonet couplings used by the Northwest African fire brigades are the best couplings I have ever seen. These couplings are instantaneous, simple, lightweight (often being made of aluminum) and fool-proof (male and female ends being identical). Because of limited water supply 45mm (approx. 1¾") hose is very popular but larger sizes (70mm or approx. 2¾" being general) are also used. The unlined hose is carried on hose reels transported on the fire trucks. Small-tipped play-pipes are general. However, our American shutoffs proved very popular and one department made a number from our pattern. Both mechanical and chemical foam is used.

Building Materials Non-Inflammable

The Italian cities I have been able to visit are largely built of non-flammable materials. Water mains are generally of limited capacity, and fire departments relatively small. The equipment I have seen is modern. Many triple combination pumpers are of the enclosed type with large booster tanks. The "Magirus" type turntable ladders are in use. These have a longer reach than any of the U. S. ladders, and are mounted on a relatively short wheel-base chassis. The ladders have a mechanical hoist, are one-man operated, and are equipped with several safety devices.

No doubt I will learn about other forms of fire apparatus and equipment, as we progress into France and Germany, and I hope that I will be able to inform our American fire officers of foreign fire ground practices and technique through the media of FIRE ENGINEERING.

*The large percentage of nonflammable material used in buildings reduced the fire risk so that city fire brigades are much smaller than fire departments in the U. S. protecting cities with similar populations, while the small town brigades have practically no fire fighting equipment.



An Italian 45 Meter (Approximately 145 Feet) Aerial Ladder Mounted on a Short Wheel-Base Chassis. All Evolutions Are Controlled by One Man, with Numerous Automatic Safety Checks

Assistant Chief C. W. Jackson Dies

Charles W. Jackson, retired assistant chief of the New Haven Fire Department, with a record of thirty-eight years as a fire fighter, died on February 12 at Rockledge, Fla., after an illness of about a year.

At the time of his retirement Chief Jackson was one of four men in the fire department with longest record of service. His career as a fire fighter began in 1897 when he was appointed a substitute hoseman. He was appointed a permanent member of the department in 1898, and advanced to the grade of lieutenant in 1911, and to captain in 1920. On April 15, 1929 he was appointed assistant chief and assigned to a battalion covering the western section of the city.

Dr. Yandell Henderson Dies

Dr. Yandell Henderson, director of the Yale University laboratory of Applied Physiology, died recently in La Jolla, California, while visiting his son.

He made extensive studies on the effect of alcohol on human beings and was widely known throughout the country for his testimony in legal cases on physiological problems and frequently testified before congressional committees. He was one of the developers of the H. & H. inhalator.

Dr. Henderson was chief of the physiology section of medical research board, aviation section, Army Signal Corps in World War I.

He was born Louisville, Ky., April 23, 1873, and joined the Yale faculty in 1900 and retired thirty-eight years later.

Dr. Henderson made one of his most notable appearances before a congressional committee in 1932 when he testified before the House Ways and Means Committee that four per cent beer was virtually non-intoxicating—less intoxicating, in fact, he contended, than a cigar.

Practical Training for Auxiliary Firemen

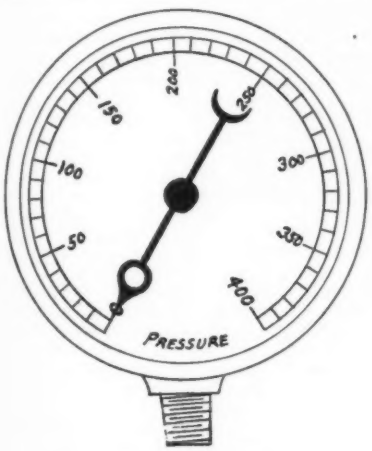
By FRED SHEPPERD
Editor, FIRE ENGINEERING

IN this installment of the series of articles on "Practical Training for Auxiliary Firemen" is discussed pump operation and gauges.

Q. What are the three types of gauges commonly found on fire engines?

A. Pressure gauge, vacuum gauge and compound gauge.

Q. What is the purpose of the pressure gauge on the pumper?



Pressure Gauge

A. The pressure gauge gives the pressure in pounds per square inch developed by the pump on a fire engine.

Q. What is the function of the vacuum gauge?

A. The vacuum gauge records the negative pressure, or vacuum, developed on the intake side of a pumper. This vacuum may be produced either by lifting water by suction or drawing from the water system where the flow is inadequate.

Q. What is the function of the compound gauge?

A. The compound gauge records either vacuum or pressure. To the left of the zero on the compound gauge (reading counter-clockwise), the readings are shown in "inches" of vacuum. By inch of vacuum is meant a vacuum represented by the equivalent of an inch of mercury. As one inch of mercury is equivalent to 1.134 feet of water, the reading in inches of vacuum is commonly considered as feet of water. Thus a reading of 10 on the vacuum gauge would be taken to indicate a negative head, or lift, of 10 feet. From zero, measured clockwise, the readings indicate pounds of pressure per square inch.

Q. Are pressure gauges and compound gauges ever calibrated in other than pounds pressure?

A. Occasionally gauges are calibrated in "feet" of water. Thus a reading of 200 on the pressure gauge would indicate a head of 200 feet of water.

Q. Where are the various types of gauges commonly located on pumpers?

A. Pressure gauges are usually found on the discharge side of all positive displacement pumps.

Vacuum gauges are not often used on fire apparatus, but when employed, are placed on the intake side of the pump.

Compound gauges are installed on the suction side of all pumps and are usually provided in place of the straight pressure gauge on the discharge side of centrifugal pumps. This gauge shows the pressure received from the hydrant, or the vacuum created on the intake side, whichever happens to be the case.

Q. What is the first thing to do when a pumper is to be placed in service at draft?

A. Select a site as near as possible to the source of supply (i. e. river, lake, creek, etc.) but at the same time making sure that the pumper will be on a firm foundation. Make sure the lift at the site selected is well within the capabilities of the engine.

Q. In the event that the ground alongside the body of water from which draft is to be taken is not firm, what may be done?

A. Place planks, or rocks, at the point pumper is to be placed so as to provide satisfactory foundation.

Q. If a pumper is to be placed on a wooden pier which has not been used recently, what precautions should be taken?

A. Check the planking on the pier as well as supporting beams. If the planking is decayed or apparently weakened, other planks should be placed lengthwise on the pier, and the truck rolled in on these planks. The use of the new planks, laid loosely over present pier flooring, distributes the load and reduces the likelihood of failure of pier planking under the weight of the truck.

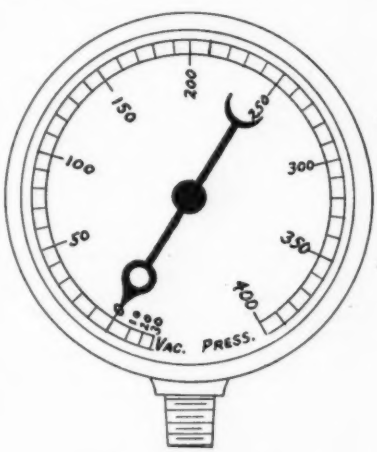
Q. Where a pumper has been driven into position to operate from draft at a surface source supply, and is to be placed in operation, what preliminary steps should be taken?

A. First check the brake, and use chocks under wheels to prevent movement of the truck, particularly if the ground is inclined. Before the driver leaves the truck, he should disengage the drive to the wheel axles and engage transmission in proper gear for pumping. Gear shift lever locks should then be engaged to prevent accidental shifting of gears. Throttle is thereupon set to provide an idling speed a little above ordinary speed.

Q. What procedure is followed in connecting up suction hose and getting it in readiness for operation?

A. The first step is to connect up the lengths of suction hose to be used. If the lift requires two lengths, these should be hooked up first; if it requires three lengths, the three sections are hooked up before being connected to the pumper.

After the lengths are connected up, rope is attached to the eye on the end of the strainer to provide a means of raising or lowering it as desired.



Compound Gauge

After these connections, etc., have been made, then the other end of the suction line is attached to the intake connection on the pump, and the connection drawn up tight. The pumper is now ready for operation.

Q. How deep should the strainer be submerged under water?

A. The strainer should be placed 1½ feet or more beneath the surface of the water.

Q. Why is it necessary to place the strainer at this depth?

A. To prevent the entrance of air into the suction line. Incidentally, the depth referred to above is the depth of the uppermost part of the strainer below the surface of the water.

If the strainer is permitted to remain too near the surface, whirlpools are formed, and air enters through these whirlpools into the strainer and from there to the suction line into the pump. This air upon leaving the nozzle on the end of the line will destroy the effectiveness of the stream.

Q. In the event that the depth of water in the source of supply is insufficient to provide proper coverage of the strainer, what steps should be taken to prevent air from entering the strainer?

A. Where the strainer is submerged but a short distance, the formation of

whirlpools and the entrance of air into the strainer may be quite effectively checked by placing a wide board or door on the surface of the water directly over the strainer.

Q. How near the bottom of a stream may a strainer be placed when a fire engine is to pump from draft?

A. This depends upon the nature of the bed of the stream, or other source of supply being used. If the bottom of the stream, or other body of water, is covered with leaves or other debris which might clog the screen, the strainer should not be permitted to approach the bed of the stream nearer than one foot. The rope attached to the strainer is fastened to some object ashore to keep the strainer at proper level.

Q. If the depth of the water is inadequate to permit a clearance of twelve inches between the strainer and the bed (of the stream, pond, lake, or other source of supply), what precautions should be taken?

A. When the depth of water is inadequate, place plank, door, ladder, sheet metal, etc., between strainer and the bottom to prevent drawing sand, stones, leaves, and other foreign materials into the pump.

Large wire, splint or mesh basket placed over the end of the suction hose is often a valuable auxiliary to the suction strainer, particularly when pumping from water with considerable debris in it. If time permits, a large box or barrel may be embedded in the body of water to increase the effective depth of the end of the suction hose.

Q. After necessary hose layouts are attached to discharge outlets of pump, and the pump is being readied for operation, what precautions should be taken?

A. Be sure that all drain valves and other connections are tightly closed; be sure that the blank cap on the suction inlet of the pumper (to which suction hose is not attached) is closed tightly.

Q. What steps are followed when positive displacement type of pump (piston or rotary gear) is placed in operation, particularly insofar as priming the pump is concerned?

A. The first step is to open the discharge gates, to which hose lines are attached, and to close the churn valve.

Pump gear is placed in "capacity" and the throttle opened up, to turn the engine over at a moderate rate of speed.

Hand Lines Are Sometimes Provided with an Independent Valve as Shown, Permitting the Shutting Off of Line Without Closing Hydrant.

It is unnecessary to race the engine when priming.

After water has reached the pump, and pump has been primed, then the motor is speeded up to such a point as to give the desired water pressure at the engine.

In the event that lines are long, or that a higher pressure is desired at the pump, the pump control is shifted to "pressure".

Incidentally, in making such changes from pressure to capacity or capacity to pressure, the throttle is retarded during the operation.

Q. What are the steps to be followed in the priming of a centrifugal type of pump?

A. First, close all discharge valves, and close the churn valve, if such is provided. If pump is of the parallel series type, set the control valve for "capacity" or "pressure" as desired. If the pump is provided with auxiliary rotary priming pump, engage the priming pump and increase speed slightly.

If the pump is provided with auxiliary vacuum priming from the motor (or similar device), engage the centrifugal pump impeller and open the valve in vacuum connection; increase speed very slightly.

When the pump is primed, it will be noticed by the discharge of water from the auxiliary priming pump, or by registration of pressure in the centrifugal pump with vacuum priming. Disengage the priming pump and engage the centrifugal pump impeller simultaneously, or close vacuum control valve.

Increase the speed slowly to maintain adequate pressure in the pump while the discharge valves are being opened. After the valves are opened, advance the throttle until the desired engine pressure is indicated on the gauge.

When the desired pressure is obtained, set the relief valve or governor to operate at a few pounds higher than the desired operating pressures; about five pounds above the normal pressure is usually considered sufficient.

Open the cooling water supply control valve to maintain motor temperature within the range recommended by the manufacturers.

If tachometer is provided, observe motor speed from time to time. Also observe water temperature, oil pressure, fuel and water pressure gauges frequently.

Q. What steps are taken when shutting down the pump after it has been in operation?

A. If the shut-down is to be of short duration, it will not be necessary to disengage the pump gears. Retard the throttle to maintain about twenty-five pounds pressure with the line shut down and with churn valve open. To resume operation, it is only necessary to open the line, close the churn valve and advance the throttle.

For a permanent shut-down, retard the throttle, open churn valve, close discharge valves, disengage pump gears, close auxiliary cooling line, bleed hose line, drain pump and disengage suction and discharge hose.

Q. Where suction is to be taken from hydrant, rather than by draft, what steps are usually followed in placing pumper in operation?

Making the Hookup: Men at Left Are About to Connect Suction Hose. Those at Right Are Stretching a Line of 2½-Inch Hose.

A. First, the pumper is so located as to make easy connection to the hydrant selected. The suction hose is connected to the hydrant and the suction intake on pumper, and precaution is taken to make sure that gaskets are provided and the connections are tight.

Then close the discharge valve on the pumper, and close the churn valve and all drain valves. Make sure that the cap on the suction connection on the other side of the pumper is tight. Open the hydrant wide.

When lines are ready for use, engage the pump gear shift lever in proper position. Open the discharge gate valve, and advance throttle sufficiently to obtain the desired pressure as indicated on the pressure gauge. Observe the safety precautions as described in the method of operating pumper from draft, insofar as setting the relief valve or governor, opening of cooling water valve and observing gauges and indicators, are concerned.

Q. If the pressure on the suction side of pump, operating at hydrant, shows a serious pressure drop, what does it indicate?

A. It usually indicates that the main to which hydrant is attached is being asked to supply more water than it is capable of delivering.

Incidentally, if the pressure on the intake side of pumper shows less than five pounds, it is better to reduce the discharge from such a pumper by shutting down one of the lines or reducing the size of nozzle or nozzles. Under no condition should a pumper be operated at a vacuum when taking suction from a hydrant.

Q. When a fire engine returns to quarters from a fire, what check-ups are usually recommended?

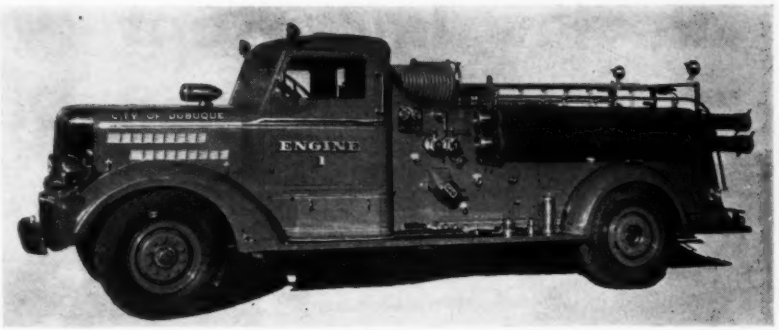
A. Check the amount and condition of oil in crankcase and add oil, if necessary. If oil is too thin or shows excessive foreign matter, drain off and replace with fresh oil.

Check gasoline tank, and if necessary, fill tank. Check water in radiator and, if necessary, add water.

Check important lubrication points; examine for missing or loose parts and make a report of the same.

Clean entire apparatus and dry thoroughly all parts subject to rust.

Leave apparatus ready for immediate response to next alarm.



Triple Combination Pumper, Showing Suction and Discharge Hose Connections and Gauges

War Plant Destroyed by $2,000,000 Fire

The most costly and one of the most spectacular fires in the history of Portland, Ore., on February 2 destroyed the west side war production plant of the Iron Fireman Manufacturing Company, builders of Liberty ship engines. Loss was estimated at $2,000,000.

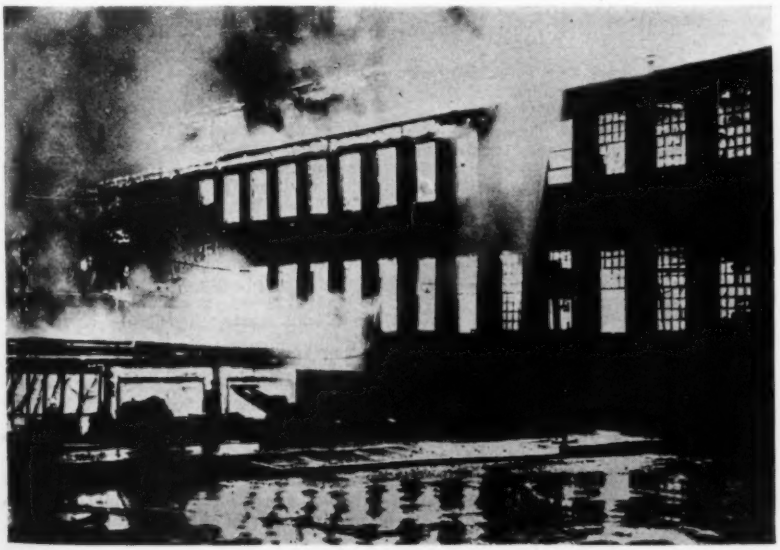
The plant, composed of a number of buildings varying from one to four stories in height, some of wood-frame and others of brick construction, occupied two city blocks.

The cause of the fire was unknown. In the destruction were twenty-four Liberty ship engines, four complete and the others in various stages of manufacture. A completed engine has a value of slightly less than $100,000.

Acetylene tanks in the plant exploded at intervals as the flames spread with great rapidity, and police had to push back spectators just before the first of a number of sixty-gallon drums of kerosene on an adjacent sidewalk exploded under terrific heat.

The first alarm was turned in at 6:12 p.m., but so rapid was the spread of flames that firemen could save only the south end of an L-shaped machine shop. The blaze was under control two hours after its inception and after seven alarms had brought nearly all of the city's fire equipment to the scene.

Day-shift firemen and civilian defense auxiliary fire corps were called to augment the night shift in battling the blaze. Cost Guard fire units also gave aid. Utilized were twenty-six pieces of fire apparatus, two fireboats, thirty-three civilian defense auxiliary companies.



Ship Engine Plant Ruined by Fire

Explosion-spread flames race through the Iron Fireman Manufacturing Company's Liberty ship engine plant in Portland, Ore. Only two of the half-dozen buildings making up the plant escaped the blaze.

Chief Harry Carmines Dies

Chief Harry Linwood Carmines of the Hampton, Va., Fire Department died recently, at the age of thirty-five.

Chief Carmines broke his ankle when he fell while working on a stove pipe at the store he operated with his father and brothers. A few days later he became ill and grew steadily worse. Pneumonia set in.

Besides being Chief of the Hampton Fire Department, he was treasurer of the Virginia State Firemen's Association and a member of the State Fire Chiefs Association of Virginia, Southeastern Association of Fire Chiefs and the International Association of Fire Chiefs.

He was a member of the Tidewater Firemen's Association and Chairman of the Legislation Committee.

January Fire Losses

Fire losses in the United States in January were estimated at $38,572,000, an increase of $10,839,000 or 39 per cent over losses of $27,733,000 in January, 1943, according to estimates announced by the National Board of Fire Underwriters. The Board's estimates are based upon incurred losses reported by its member companies, plus an allowance for unreported and uninsured losses.

The January losses represented a decrease of $9,144,000 or nineteen per cent from losses of $47,716,000 reported in December, 1943. Losses in the twelve months period from February 1, 1943, to January 31, 1944, amounted to $391,074,000, as compared with $307,017,000 for the similar period ending with January, 1943.

Review Important 1943 Higher Court Firemen Decisions

By LEO T. PARKER
Attorney-at-Law, Cincinnati, Ohio

DURING the year 1943 the higher courts in different localities rendered interesting and outstanding decisions involving municipal firemen. In this article we shall briefly review the most important of these decisions.

First, it is important to know that modern higher courts consistently adhere to the legal principle that an "officer" of a municipal corporation differs from an "employe" of such corporation. Therefore, very frequently it is important to determine whether a person is an officer or an employe.

For example, in Reed v. City of Peoria, 47 N. E. (2d) 863, reported May, 1943, it was shown that a law provided that the term "officers" includes all members of the fire department who shall have been employed as regular members for more than one year.

The important question presented the court was whether several municipal firemen were entitled to reinstatement after they were discharged. Since a state law prohibited discharge of municipal officers the higher court held the firemen entitled to reinstatement and said:

"It was the intention of the legislature, to give city firemen the status of municipal, or city officers, to the extent of making them eligible to apply to the courts for an examination and protection of their rights."

Occupational Distinctions

The term "fireman" relates to a person engaged in the fighting and extinguishment of fires. Therefore, persons whose chief duties are not to extinguish fires cannot recover salaries, pensions, overtime payments, etc., specified by laws for "firemen."

For instance, in City of Galveston v. Fredrickson, 174 S. W. (2d) 994, reported November, 1943, it was shown that a city fire marshal filed suit against a city to recover the reasonable overtime services alleged to have been rendered by him. He based his suit upon a state law that allowed "firemen" extra payment for Sunday work. However, the higher court refused to allow the fire marshal's claim, and said:

"The duties of the fire marshal are clearly those of a separate and distinct administrative and investigative office which, while related to the fire department of the city in ultimate objectives, are clearly not the duties of a fireman as such occupation is commonly known and understood."

Fireman Cannot Waive Salary

Municipal firemen cannot waive their rights to collect wages specified by valid laws. Neither is a fireman deprived of the right to sue and recover legal wages although he accepts low wages without protest.

For instance, in McQuire v. City of Dallas, 170 S. W. (2d) 722, reported May, 1943, a higher court held valid a state law that provides maximum hours, minimum wages and overtime compensation for firemen in cities of more than 75,000 inhabitants. The state law provides that it shall be unlawful for any city of more than seventy-five thousand (75,000) inhabitants to require or permit any firemen to work more than twelve (12) hours per calendar day. A fireman sued a city to recover payment for overtime in virtue of being required to serve as a fireman on the night shift during the first half of each month, during which time he was required to work 14 hours per day.

The city counsel contended that the fireman waived his right to recover additional compensation because of his acceptance without protest of the amounts paid him semi-monthly by the city.

In holding the fireman entitled to receive overtime payments, the higher court said:

"It is now well settled that an officer or employe of a municipality whose compensation has been fixed by law cannot agree to accept a lesser sum than the salary or wages provided by law."

Modern higher courts hold that compensation for the performance of the duties required of municipal firemen cannot be made a matter for traffic, bidding or trade, and any contract to accept any different compensation than that provided by state statute is contrary to public policy and void in every detail.

Firemen Recover Back Wages

For illustration, in George v. City of Danville, 50 N. E. (2d) 467, reported October, 1943, it was shown that in 1937 forty two members of a municipal fire department addressed petitions to the mayor and city council requesting that the city council do not reduce the number of employes on the fire department and pledging that they would not at any time claim or present any action with reference to the difference between their present salaries of $112 per month and the salary of $175 per month specified by a state law. By these petitions they recognized the inability of the city to pay the statutory salaries and recognized that it would be necessary for the city to reduce the number of employes on the fire department if they were to receive the full statutory salary. The city officials retained the firemen. However, in 1943 these firemen sued the city to recover the difference between the amount actually paid them for their services since July 13, 1937, and $175 per month being the minimum salary provided by the state law.

In holding the city bound to pay the firemen the back wages, the higher court said:

"It is conceded that the contracts violated the public policy of the state, and for that reason were invalid... The decisions of this court show that it is definitely committed to the conclusion that a contract made in violation of established public policy will not be enforced."

City Official Not Liable

Modern higher courts hold that the inhabitants of a municipal corporation hold their property subject to a reasonable exercise of police power. Thus property may be destroyed by authorized officials to protect the public welfare when such property becomes a nuisance or dangerous to public safety.

With respect to fire protective regulations the higher courts consistently uphold the validity of such regulations. Moreover, public officials are not liable to property owners who sustain financial losses by enforcement of these regulations.

No Permit Issued

For example, in Miller v. Foster, 11 N. W. (2d) 674, reported December, 1943, it was disclosed that a property owner remodeled a building into a five-family unit building. No permit was ever issued by the city authorizing such alteration which resulted in a multiple family dwelling of less than ordinary construction. By "ordinary construction" is meant that all enclosing walls consist of incombustible material.

The building was located in a fire zone. Such an alteration in a fire zone violated the city ordinance and state code. Due and proper notice of these violations was given to the property owner and he continued to permit the violations to exist. Thereafter, an official of the city fire department caused notices to be delivered to four tenants of the building. These notices advised the tenants that the building violated the Building Code of the city and notified them to cease occupancy of the premises within ten days from the receipt of the notice. The tenants vacated the premises and the property owner sued the city official for damages. In holding the official not liable, the higher court said:

"The purpose of the ordinance is to provide reasonably fire-proof buildings for the safety of tenants in multiple family dwellings. Some method of enforcement of this ordinance is necessary . . . The city, under its police power, had authority to prohibit the use or occupancy of a building or portion thereof for failure to comply with the requirements of the ordinance where the owner or occupant failed to make the building comply after notice of its violation of provisions of the ordinance. It

is undisputed that his (official) acts were within the scope of his official authority and in the line of his official duty, which relieves him from personal liability."

When a fireman dies suddenly and mysteriously the burden of proof that his death was an accident arising out of his employment rests upon the claimant for compensation, and such proof must amount to something more than mere guess.

Fireman Dies Suddenly

For example, in Mook v. City of Lincoln, 9 N. W. (2d) 184, the testimony proved that a man named Mook fell while he was engaged in the performance of his duties as a city fireman. There was no doubt that he died at least within the space of a few minutes, if not instantly. The question for determination was whether he died as a result of the fall or fell as the result of his death. Since an autopsy was performed on the body disclosed no external evidence of skull or other bony injury, the higher court refused to grant compensation to Mook's widow. This court said:

"It may be stated here with regard to the fall that the evidence as the manner thereof is unsatisfactory and uncertain."

Pension Fund Deficient

Generally, a deficiency in a pension fund is primarily due to the insufficiency of a pension tax as limited by statute. The use of an emergency fund usually is discretionary with the municipal officials. A majority of state legislatures have passed laws authorizing public officials to enact taxation for making up deficiencies in pension payments, and officials must comply with these laws.

For example, in Mathewson v. City of Shenandoah, 11 N. W. (2d) 571, reported December, 1943, it was shown that a city did not have sufficient funds from which to pay pensions to retired firemen. The court held that the establishment and use of an emergency fund to pay the pensions is discretionary with the governing body of the municipality, and subject to the approval of the state board, but the exercise of such direction should be completed in view of providing funds for payment of these pensions. This court said:

"Appellant (fireman) is entitled to receive payment of his pension and there is a duty resting upon the city to provide a fund sufficient to make the payments accruing thereon."

State Law Invalidates City Ordinance

Any and all city ordinances are void which contradict a state law.

For example, in State ex. rel. Daly v. City of Toledo, 50 N. E. (2d) 338, reported August, 1943, it was shown that a city ordinance was passed requiring retirement of deputy fire chiefs on reaching the age of 65 years. However, a state statute provides that tenure of every officer in classified service shall be during good behavior and efficient service. Therefore, the higher court held the ordinance void and of no legal effect. This court said:

"The ordinance here in question provides compulsory retirement of members of the police and fire divisions at the age of 65 years. The sole question for determination is the validity of the ordinance . . . We are of opinion that this ordinance is inconsistent with State law 468-17a, General Code, and therefore invalid."

Brief Review

In Jenkins v. City of Los Angeles, 140 Pac. (2d) 45, it was shown that a city charter required payment of pensions to "child" or "children" of deceased retired member of the fire department until the child or children should attain the age of eighteen years.

The legal question presented the court was: Are children born after the fireman is in retirement included by this law?

In holding in the affirmative, the higher court said:

"No good reason has been suggested to us why the plan of the charter should have embraced a purpose to discourage the birth of children to city firemen after their retirement by depriving them of the right to receive their father's pension or to share it with the children born before his retirement."

In Reed v. Board of Police and Fire Commissioners of City of Peoria, 43 N. E. (2d) 849, reported January, 1943, it was shown that certain firemen were discharged for alleged political activity, but no charges in writing were made and the only political activity was by the Trades and Labor Assembly and its affiliate, a fire fighters union, to which the firemen belonged.

The higher court promptly ordered reinstatement of the firemen.

In State ex. rel. Russ v. Fire Department Relief Ass'n of City of Missoula, 136 Pac. (2d) 989, reported June, 1943, it was shown that a person named Russ was temporarily employed as a fireman in a municipal Fire Department, beginning on September 1, 1918. His employment was discontinued about April 30, 1919. On April 20, 1920, when he was past 45 years of age he was appointed by the city council to the position of auto mechanic. He was reappointed year after year until June 15, 1941, when the position was abolished and he was, at his own request, granted leave of absence without pay by the city council. He was carried on the pay roll of the city as an auto mechanic and his yearly appointment designated him as auto mechanic.

Russ filed an application for membership in the Fire Department Relief Association of the city.

Since Russ was not eligible to the position of city fireman and never complied with the statutes relating thereto and was never appointed fireman, the higher court held that he was not entitled to membership in city Fire Department Relief Association, though he occasionally performed some of duties of fireman particularly in connection with large fires. This court said:

"Under these circumstances it cannot be said that he was a regularly confirmed member of the fire department as required by the statute. The qualifications for membership in the association being statutory, and the association itself being a creature of the statute, this court is bound by the provisions of that statute and cannot disregard it."

Norfolk's Fire Loss Lower

Although its population has more than doubled due to wartime conditions, the city of Norfolk, Virginia, had a lower fire loss and fewer alarms in 1943 than the preceding year, according to the report of Fire Chief Edward J. Cannon.

City firemen responded to 3,264 alarms last year, 29 less than the year of 1942. The total fire loss for the city was $458,634 as compared to $608,058 the year previous and $769,224 in 1941. The figures were supplied by J. W. Myers, Bureau of Vital Statistics. The fire division has a personnel of 237, four below its authorized strength.

SANFORD D. DEWEY.

Fire Menaces Atlantic City Boardwalk

Once again fire struck Atlantic City, N. J., as flames swept through the six-story brick store of Sears, Roebuck and Company, causing heavy damage. Firemen, fighting the flames from every vantage point on surrounding buildings, seek to save nearby apartments, hotels and stores.

AIRPORT CRASH FIRE TRUCK DEMONSTRATED AT WASHINGTON

Simulated Plane Crash Fire at Bolling Field Provides Test of Effectiveness

RECENTLY at Bolling Field, Washington, D. C., a demonstration of extinguishing a simulated plane crash fire by use of large carbon dioxide crash unit was carried out. The fire, which involved several hundred gallons of gasoline, was extinguished in twenty seconds.

Three Tons of CO_2 Released Per Minute

The extinguishing equipment used at Bolling Field was a 23½-ton all-wheel drive Cardox airport fire truck. This unit has a top speed of about fifty miles per hour. It can release three tons of carbon dioxide, if necessary, onto a blazing plane in approximately one minute.

The truck was an actual production model, built by Cardox Corporation, working in cooperation with the Army Air Forces, and identical with those now being procured by the Corps of Engineers for use at airfields.

For the demonstration an old plane fuselage and several hundred gallons of gasoline were used. The fire was allowed to reach a stage in which the plane and ground surrounding it were involved by flame before extinguishment was begun.

The primary objective in such a fire is the immediate knocking down of heat and flame so that trapped plane personnel can be rescued.

To accomplish this objective the Cardox airport fire truck utilizes liquid carbon dioxide, maintained at the low temperature of zero degrees F. This carbon dioxide is discharged at a high rate into the fire, so that the fire is "cooled out" quickly.

Extinguishment can be started when the truck is still approximately fifty feet from the plane by a mass discharge of carbon dioxide from the boom nozzle mounted on top of the truck. The gas is released at the rate of approximately 2,500 pounds per minute.

Controlled From Cab

The front nozzle, mounted just ahead of the truck radiator, and a linear ground-sweep nozzle—each with a capacity of 1250 pounds of carbon dioxide per minute—are discharged directly into the fire. By controls on the instrument panel within the cab, the boom and front nozzles are moved up or down to right or left, for most effective application of the carbon dioxide. Discharge of both these nozzles, as well as the linear nozzle, is also controlled from within the cab.

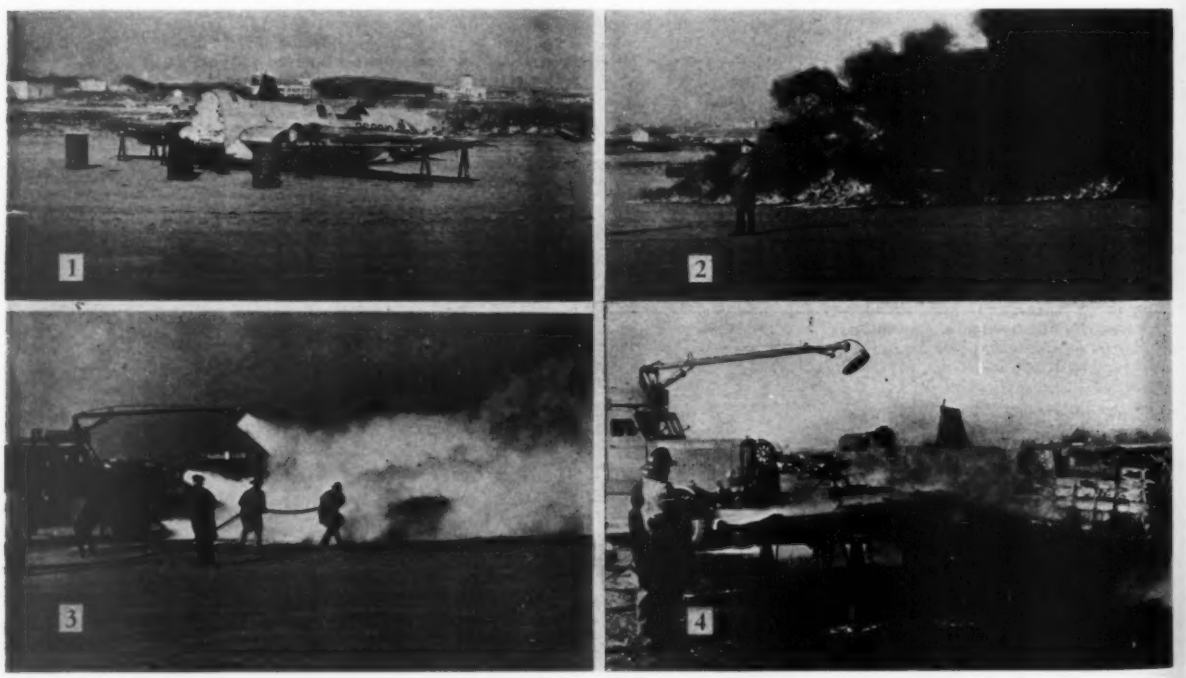
Two hose lines, each 100 feet long, with 1½-inch nozzles of 750 pounds of carbon dioxide per minute capacity, are brought into action to give greater flexibility of application. Two ⅝-inch hose lines fitted with bayonet type nozzles may also be used to pierce and flood plane compartments with carbon dioxide, and so reduce the possibility of explosion and spread of the burning area.

To supplement the extinguishing action of carbon dioxide, Cardox airport fire trucks also use water in a unique way. From a 500 gallon tank, water, under pressure supplied by the carbon dioxide itself, is injected through rings on boom and front nozzles into the stream of the carbon dioxide discharge, which still further augments the latter's cooling effect and at the same time gives water much of the three dimensional characteristic of the carbon dioxide discharge. There are also two water-spray nozzles on the front of the truck and two 100-foot lengths of water hose line which are used chiefly for wetting down hot metal and burning grass.

Cooling effect of the carbon dioxide discharge is augmented because of the high yield of CO_2 snow realized. This snow results from the sudden release to the atmosphere of stored carbon dioxide. It has a temperature of minus 110 degrees F. Carbon dioxide released at 0 degrees F. yields forty-five per cent CO_2 snow, as contrasted with twenty-one per cent at 86 degrees F.

Effective Reach

More effective reach is achieved because of the high yield of comparatively heavy CO_2 snow; the heavy snow can be projected greater distances than the carbon dioxide gas.



1. Several hundred gallons of gasoline poured over this fuselage and contained in drums in and around it, were used as fuel for fire at Bolling Field, Washington, that simulated closely as practicable one resulting from actual plane crash. 2. The fire is allowed to gain headway before extinguishment is begun. In a plane fire one of the most serious problems is that of hot metals which must be cooled in order to prevent re-ignition. 3. In twenty seconds all flaming has ceased. Linear ground-sweep nozzle, beneath bumper, discharges at the rate of 1,250 pounds per minute, not only extinguishing fire, but also keeping it "pushed" back from the front of the truck. 4. The fire is out completely. Total discharge time, including cooling off period, forty seconds. Water hose lines are used to wet down fire zone following extinguishment. The intensity of heat of the fire that was allowed to develop before extinguishment was begun is indicated by the burned fuselage section.

WITH OUR READERS

Business Block Swept by Fire

To the Editor:

On January 26, one of the worst fires in the Borough of Fairlawn, N. J., occurred. The Radburn Plaza Building was swept by fire. The blaze was discovered by a passing police officer at 2:54 a. m. Four engine and one truck company responded to the alarm, but when the blaze spread, three fire companies from nearby Hawthorne were called in. The volunteer firemen from both towns fought the fire for more than six hours before bringing it under control.

An estimate by Fire Chief Richard Kuiken put the damage at over $150,000.

Twelve firemen were treated at the scene for smoke inhalation and lacerations. None of them required hospitalization.

Four stores, two offices, the community library and the meeting room of the Radburn Church were completely gutted.

The building suffered a loss of $45,000 on March 23, 1942, when it was damaged by fire.

Very truly yours.
RICHARD ADELMAN,
Fairlawn, New Jersey

What a Town Can Do for Its Fire Department

To the Editor:

Herewith are three photographs showing what our town has done for the fire department in the last four years.

We are a town located south of Boston, with a normal population of 8,500 people, but at the present time have a daytime population of some 45,000 people, due to the Bethlehem-Hingham Ship Yard and the Naval Ammunition Depot, the largest on the east coast, being located here.

Our fire department is made up of eighteen permanent men including the chief and one captain, and ninety volunteers. We have, out of this total, thirty-nine men including one permanent man in the armed service, which makes our fire service under considerable strain for manpower.

We are fortunate in having mutual aid agreements with our neighboring towns of Hull, Cohasset and Weymouth and with the above mentioned war plants. We also aid a great deal the above war plants in any large fires that do occur within their confines.

During the past year we had a response of 383 alarms with a fire loss of $12,211.00, which is the lowest in our town for a great many years, yet the number of alarms was the second greatest in the history of the department.

Very truly yours,
ALBERT W. KIMBALL,
Chief, Hingham, Mass.

Christmas Fire Prevention Display

To the Editor:

The photograph herewith is of our Christmas fire prevention display. As the photograph shows we had two Christmas trees, one decorated with ornaments, silver icicles and lights, a really beautiful tree, and the other burned. Under the latter we had laid rags and papers that has been burned to give it a very realistic look. In the center of the table and above the trees we had a sign wishing every one a Merry Christmas.

Right below this was a sign reading "This scene (meaning the tree on the left in the picture) can change to this one (the one on the right) by not being fire conscious." Below this was a sign saying "Obey this sign," (the sign reading No Smoking).

In front of the table we placed the various types of extinguishers namely, soda acid, foam, carbon tetrachloride, sand and plain water. The sign above them read "Do you know how to use each of these? If not, ask your fireman to show you how, now?"

On a board, six by twelve, on the right of the picture we placed fire prevention posters, pictures of the major blazes of 1942 and headlines from local newspapers on large fires throughout the country stating on the sign, "You remember these; and don't let it happen here." Also on this board we had a number of fire prevention slogans, such as "Use Underwriters approved electrical equipment", "Keep your dust rags and oily mops in metal containers", etc.

This display was set up in our fire house on the Tobyhanna Military Reservation, Tobyhanna, Pa., of which Captain Thomas J. Lavin is the Post Engineer and Fire Marshal.

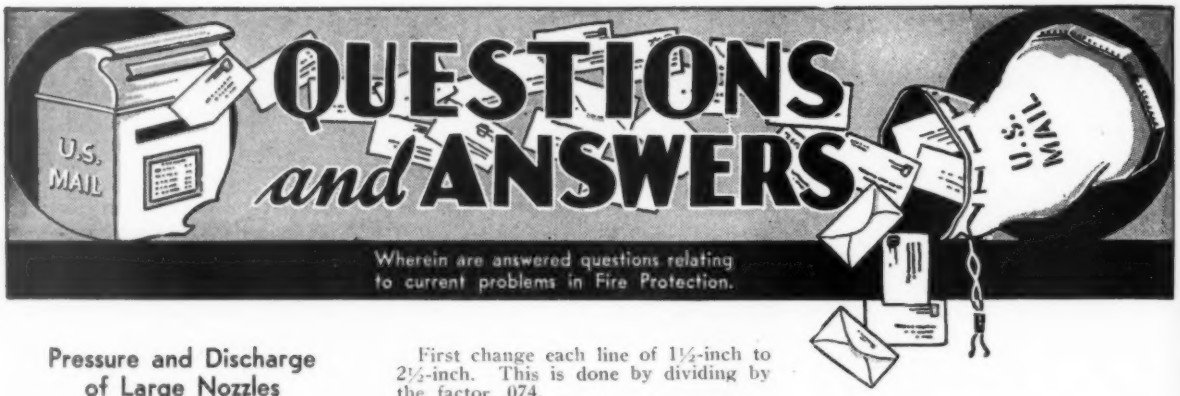
Our department consists of eighteen men, working twenty-four hours on and twenty-four hours off. We have

(*Continued on page* 180)

Christmas Fire Prevention Display Set Up by the Tobyhanna Military Reservation Fire Department

Hingham, Mass., Three Fire Stations

Left to right: Central Fire Station dedicated March, 1942, at a cost of $85,050.23, including new fire alarm central office equipment; North Fire Station dedicated June, 1942, at a cost of $53,250.61; South Fire Station, dedicated August, 1942, at a cost of $41,988.04.



Pressure and Discharge of Large Nozzles

To the Editor:

A 500-gallon pumper is pumping through two 200-foot lines of 2½-inch hose each equipped with a 1¾-inch nozzle. Engine pressure is 180 pounds. Stream from each nozzle is good, but short, reaching only about 100 feet.

What is the friction loss in each line? What is the nozzle pressure at each nozzle and the discharge from each nozzle?

J. F. I

Answer: The solution to your problem is as follows:

N. P. = E. P. ÷ (1.1 + KL), where E. P., the engine pressure, is 180 pounds.

K, a factor depending upon hose and nozzle diameters, is .907.

L is the number of fifty-foot lengths of hose in the line, and is 200 ÷ 50 = 4.

Then N. P. = 180 ÷ (1.1 + .907 × 4)
= 180 ÷ (1.1 + 3.62)
= 180 ÷ 4.728
= 38.1 pounds.

This nozzle pressure is not sufficient to give a stream of satisfactory range or stiffness

Discharge = $29.7 \times d \times d \times \sqrt{P}$, where d is the diameter of the nozzle in inches and P, the pressure at the nozzle.

Discharge = $29.7 \times 1\frac{3}{4} \times 1\frac{3}{4} \times \sqrt{38.1}$
= 561 gallons per minute

The friction loss in the 200-foot line is 180 — 38.1, or 141.9 pounds.

The friction loss in 100 feet is 141.9 ÷ 2 = 70.95 pounds.

Branched Lines of Small Diameter

To the Editor:

Five hundred feet of 2½-inch hose from a pumper is branched into two 150-foot lines of 1½-inch hose. Both the 1½-inch lines are being used in the second story of a building using ½-inch tips and a nozzle pressure of 40 pounds per square inch. If the pump elevation is 36 feet below that of the ground floor of the building, what is the approximate pump pressure needed? N. D. F.

Answer: The solution to the problem you give is as follows:

First, the elevation of the nozzle above the engine will be 36 feet plus the height of one story, or 12 feet, making a total of 48 feet.

First change each line of 1½-inch to 2½-inch. This is done by dividing by the factor .074.

150 ÷ .074 = 2027 feet of 2½-inch hose.

Combine these two parallel lines of 2½-inch hose, each 2027 feet in length, into a single line.

The conversion factor is 3.6.

2027 ÷ 3.6 = 563 feet of single line 2½-inch hose.

Then the layout is equivalent to a single line of 2½-inch hose 563 + 500, or 1063 feet in length.

Next combine the two ½-inch nozzles into a single nozzle. Two ½-inch nozzles are equivalent approximately to a ¾-inch nozzle.

Now solve for engine pressure.

E. P. = N. P. × (1.0 + KL)
= 40 × (1 + .068 × 21.26), where K for 2½-inch hose and ¾-inch nozzle is .068.
= 40 × 2.44568
= 97.827, or 98 pounds approximately

Add the back pressure due to the elevation of the nozzle above the engine to this figure.

Back pressure = 48 × .434, or 20.822, or 21 pounds approximately.

Then the corrected engine pressure is 98 + 21 = 119 pounds.

Effect of Hydrant Pressure Upon Pump Performance, etc.

To the Editor:

Does the piston or rotary gear pump use any or part of the hydrant pressure fed into it?

When a pumper is taking suction, it is said that it is pumping from the source of supply. We can see where the pump would have to work to clear the line, or suction, of air, but when the vacuum is created, atmospheric pressure should push the water to the pump. Yet it is claimed that the pump is pumping from the source of supply. If this is true, what happens to the atmospheric pressure?

T. J. L.

Answer: Both piston and rotary gear pumps utilize a part of the pressure furnished by the hydrant, but not as much as a centrifugal pump.

Just what percentage of the hydrant pressure they can use, we are unable to say, as this depends largely upon the design of the pump.

When a pumper is taking from suction it first creates a vacuum in the suction hose, and the atmospheric pressure forces the water up to the pump. From then on, the suction line is filled with water. However, the back pressure, or tendency to create a vacuum, remains. The pump in lifting water from the source of supply up to the level of the suction inlet does just as much work as it would do in raising water by pressure a like distance.

When a pump is taking water from suction, a check of the compound gauge will show that there is a negative head. The amount of negative head (which for all practical purposes is the same as vacuum) will depend upon the height the water is being lifted. As you probably know, the compound gauge records either vacuum (negative head) or pressure.

Pump Discharge at Reduced Pressure, etc.

To the Editor:

In "Practical Hydraulics for Firemen," where examples are given using siamese stretches of 2½-inch and 3-inch hose, why don't you use the factor 6.1 instead of reducing the line of 3-inch to 2½-inch? Where and when is the 6.1 used?

First size pumpers are rated at 1000 gallons per minute at 160 pounds pressure. As the pressure is increased, the discharge is lessened. What would be the result upon the discharge of decreasing the pressure below 160 pounds.

A. J. T.

Answer: In solving problems involving lines of 2½-inch and 3-inch in the same layout, the 3-inch line is commonly reduced to 2½-inch line to save the student the trouble of remembering another factor, namely, 6.1.

Furthermore, the factor 6.1 can only be used where the two lines are of equal length. The other method can be used no matter what the lengths of the two lines.

If the lines are of equal length, however, it is simpler and quicker to use the factor 6.1 to reduce the two of them to a single line of 2½-inch hose.

Answering your second question, if a layout of hose and nozzle is so changed as to reduce the presssure at the pump, the discharge should be greater than its rated discharge at "capacity."

(*Continued on page* 185)

Our inquiring reporter overhauls the firemanic news of the day

"What Goes on Here!"

Comes a postcard from Chief W. A. McDonnell, St. Louis (Mo.) F. D. which bears a clipping entitled "True Story" and which we quote "as is":

Jim Dawson, Fire Chief of Floral Park, Long Island, was consuming a dish of spaghetti one night recently when the door bell rang. Mrs. Dawson answered and admitted a nervous-looking man who said to the chief: "I have a personal request to make."

Mrs. Dawson left the room, and while the spaghetti got cold, the stranger said: "I have a beautiful Dalmatian by the name of Margaret. I would very much like to know if you would introduce her to your fire dog."

The man coughed a few times and left Jim his telephone number. The fire chief is thinking it over."

* * *

Apologies to Brother Hardy!

Another consistent Contrib', Mr. A. Hardy of the Fire Fans of America, writes us he sent us some material some time ago and wonders if it's been used. Nemmind, Mr. Hardy, it will find its way into print in due time. Meanwhile we quote his latest oddity. This has to do with a new set of binoculars which a Mr. Edward Hughes of Spokane (Wash.) was testing. Seems that he selected as his test a fire across town. He focused the glasses on the fire but couldn't seem to identify the burning building. Then, a short while later, he learned that the blaze was in a warehouse—where he was secretary-treasurer!

* * *

New Way to "Raise" Potatoes

Over in St. James (L. I.) crews of fire departments of five adjoining communities continued pumping water from a barn where 15,000 sacks of potatoes valued at $30,000 were stored. The barn, on farm of John Beck, was flooded by heavy snow and rain, threatening ruin to the spuds. Well, we've heard tell of a lot of queer situations which the Brothers have been called upon to meet, but raising potatoes by drying 'em is about the oddest.

* * *

Vamps Run Into Hornet's Nest!

Everything's cockeyed about this tale, sent us by an unknown Nassau County (N. Y.) "subscriber". It's about the Freeport (L. I.) Vols, seven companies of 'em, and their wild ride to put out a fire in a hornet's nest, in the dead of winter (or is the clipp' misdated?)

Brother, page Mr. Ripley! But true or not, the Freeport Brethren literally ran into a hornet's nest. It was night. At 7:51 P. M. the alarm sounded. All seven companies of the Department went helterleather to Atlantic avenue and Bedell street, there to find a surprised Harold Erlingson of 32 Atlantic avenue calmly burning out a hornet's nest in a vacant lot near his home.

Investigation by Chief Edward Kohout revealed that a passing motorist, seeing the flames between two houses as he drove along Atlantic avenue thought one of the structures was on fire, and turned in the alarm.

What's next!

* * *

Woman Trustee a Godsend?

Male members of the Endicott (N. Y.) Board of Trustees were happy to give Mrs. Florence W. Anderson, Endicott's first woman trustee, this assignment:

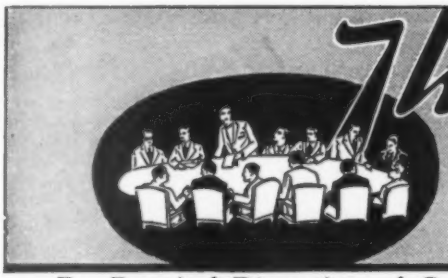
Investigate a request from the central fire station for a new cooking stove.

Our correspondent fails to relate what Mrs. Anderson did and said—or did she?

* * *

Hot Off the Tape

Earle Robinson sends these: "When National Fire Prevention Week was observed in Pittsburgh, the firemen were much busier than usual, due to a 60 per cent increase in the number of alarms". . . . "Fred Robb, considered the leading amateur magician in Green Bay, Wis., was just as helpless as any of the rest of us when he lost his door key. He had to enlist the aid of the fire department before he could get into his own home." . . . From Lower Hutt, Wellington Postal District, New Zealand, comes an item about how a faithful hound aroused the master of the house, thus enabling the fire brigade to get to work quickly and save the structure. The nub of the item was the decision of the "South Canterbury Board" to recognize the dog's faithful services by permitting him to roam the streets of Walmate (scene of the affair) without a leash and "ignore the bylaw". . . When a 12-inch water main broke in Washington, as usual somebody put in a hurry call for the Brothers. In the response, Fireman T. C. Parker, Eng. 16, made a bad landing sliding the pole and hurt his leg. . . . They're still talking about the "bubble baths" taken by the Braves of Kansas City, when they worked on that fire in the soap factory! Several of the Faithful sent in this item—. . . . Orchids to the Dumont (N. Y.) vamps who, when the local postal delivery facilities bogged down last Christmas, went to the rescue with Independent Fire Hose Company and "delivered the mail." . . . Three thousand motion pix fans sat unperturbed and watched **"I Dood It"** while firemen successfully fought a fire in the Paramount Theatre, New York City. . . . Postal authorities of Jamaica (L. I.) have been run ragged trying to apprehend a miscreant who "playfully" starts post box fires that consume most of the mail. . . . **Kenneth Dyer, the Bronx (N. Y.) sends us an item about two painters who were fined $50 each by Magistrate McGee in West Side Court for smoking while putting up a "NO SMOKING" sign on a vessel moored at a North River pier. "It was just such carelessness that caused the Boston night club fire,"** the Magistrate told the painters. He mighta added—and that burned the Normandie! . . . Guatemala expects its first fire truck any day now—a gift from a Rotary Club. . . . Fire "shock troops" to augment forest fire-fighters in New Jersey were recommended by Assemblyman Vincent S. Haneman of Atlantic County; he presented bill asking for $200,000 for the State's fire fighting services. Bravo! . . . Gordon F. Glazier, 19, of Cortlandt (N. Y.) was killed when his truck left the road while he was rushing to call firemen to a burning bus, which contained 200 gallons of gasoline. . . . On an evening in New York City, Lieut. Tom Archbold, Truck 10, summoned an ambulance for a citizen who was stricken in front of the truckhouse. An hour later Lieut. Archbold himself needed an ambulance when, with three other firemen, he fell in the collapse of a stairway at a fire. . . . Governor Dewey lifted the hunting ban in N. Y. forests when rains ended the fire peril. . . . Out in Indianapolis, according to contrib, W. R., as firemen arrived at a burning apartment, Mrs. Elizabeth Steele, 39, emerged from smoke-filled stairway, clad only in pajamas and a bathrobe, but triumphantly carrying a new summer hat. The Brothers hadda restrain her from returning to rescue a new pair of shoes. . . . Spotty, Dalmatian mascot of Fire Company No. 1, Valhalla (N. Y.), who acquired fame two years ago when she adopted a kitten which she nursed for two months, now has 12 new offsprings. . . . On the stationery of the St. Stephen (New Brunswick) fire department is emblazoned this slogan: **"We Aim to Save More Than the Cellar."** (Atta spirit, Brothers!) . . . Out in Toledo (O.) the Braves of Engine 3 remember a Mr. J. A. Godfrey. He and the lads got quite chummy, all over his jalopy. At 3 p. m. one day he called the fire putter-outers when a locked brakeband began smoking at Washington and Michigan streets. Then, coupla hours later, there was a nice little reunion when Godfrey's car backfired at Washington and Summit streets. . . . **Cause of the Cocoanut Grove fire, Boston (Mass.) which took 492 lives officially recorded as "unknown."** . . . Lewis Mather, 56, Trenton (N. J.) died when he poured gasoline over leaves he wanted to burn, and lit them. Flare-up ignited his clothing. . . . John Wysoski, maintenance man with Liquid Carbonic Corp., Long Island City, lost consciousness while working atop 80-foot tower. Members of Truck 115 and Police Emergency Squad 18 got him down, revived him. . . . **More than 2,000 auto tires went up in smoke in Trenton (N. J.) fire. . . .** In New York City a patrolman shot and killed a young man who allegedly had been setting fires to lockers in basement of a 12-story apartment. . . . In Peekskill (N. Y.) a 11-year-old boy burned to death when fire destroyed his 2-story home. He had tried to save his pet dog. Bodies of both found two feet from doorway.



The ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

ESTIMATING LOSSES TO BUILDINGS AND CONTENTS BY FIRE

THE discussion in this round table is a continuation of that which appeared in the February issue of FIRE ENGINEERING on estimating losses to buildings and contents by fire.

The generous response from our readers made it necessary to carry the discussion over to this issue.

Readers are invited to send in their comments on this subject or on next month's subject, which appears in the box on the following page. Address communications to Round Table Editor, FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

Discussion of the Topic

Waldo Merrill, Chief, Council Bluffs, Ia.: We do not make any estimates on fire losses on buildings or contents.

I use the figures given by the insurance adjusters, and some times feel that adjustments are out of line, when comparisons are made with similar losses. Just recently a company was called to a brick flat. There were eight apartments involved. The company located a gunny sack smouldering in front of the furnace in the middle apartment. The insurance adjuster allowed $135.00 to clean the smoke damage in the adjoining apartments.

Another fire occurred in a brick duplex where the occupant had to be taken from the porch roof because there was too much smoke on the stairway for him to safely leave. Smoke rolled out of the front door of the apartment next to the fired apartment, but the insurance adjusters allowed only $32.00 damage. I do not see how estimates can be made on losses, unless a person knows the amount of material needed to replace the burned area, the price of labor to do the work, etc.

T. J. Kelly, Chief, Springfield, Ill.: Fire loss estimates are made by the assistant chiefs. There is always one who makes the run. By their knowledge and experience, they have been very accurate, on down through the years.

We use insurance adjustment figures when the property is insured.

Only on a very few fires have our boys missed in their estimates. Our estimates have been eighty-eight per cent in accordance with the insurance losses in the past year.

C. J. Henry, Chief, Lexington, Ky.: We use insurance adjusters' figures and reports from the Office of Fire Prevention and Rates of the State of Kentucky on all insured property losses.

When property is uninsured, we estimate the fire loss to the best of our ability. I believe that on the smaller losses our estimates are fairly accurate.

G. W. Scott, Chief, Augusta, Ga.: We estimate fire losses, but they are not official. The Fire Department only estimates losses for a temporary record. We use the insurance adjusters figures in compiling our total losses for any given year. Where there is no insurance, we have to go by the Fire Department estimates. We find these fairly accurate.

Frank Bennett, Chief, Durham, N. C.: The Fire Department estimates losses on buildings and contents by fire, providing the fire is not considered of incendiary origin. In this event it would be estimated by the State Insurance Department, and their estimate would be accepted.

We try to keep in line with the insurance adjusters when adjustments are not too far out of line.

Our estimates have proved fairly accurate.

W. B. Sykes, Chief, Portsmouth, Va.: We estimate losses to buildings and contents only when no insurance is involved. When property is insured, we have to use the insurance adjuster's estimate, as we include in our records the amount of insurance paid on losses. We must have the estimate of losses and the amount of insurance paid so that we may determine the amount of loss after all insurance has been paid. The full amount of loss is not always paid by insurance companies.

I have found that the estimates made by this department are reasonably accurate.

We make estimates on losses and then check them against the estimates of the insurance adjuster.

Frank J. Callahan, Chief, Central Falls, R. I.: Nearly all cases are based on figures acquired from the owner, ocupant and final settlement of claims by insurance brokers.

I always figured that contents of buildings were very hard to estimate, and after realizing in a few instances how far off I was, I then decided the adjusters were far better to consult.

Joseph E. Scanlon, Chief, Lynn, Mass.: We do not estimate any losses of either building or contents, except uninsured losses.

All our losses are obtained from local agents after the settlement is made. We find this to be the only accurate method of obtaining correct losses. All our coverage and loss figures are obtained this way.

Many times in the past we have estimated losses from our own personal knowledge of values of like materials and from personal experience with home repairs, etc., only to find that the companies were very liberal when paying off.

James M. Duncan, Chief, Alexandria, Va.: The department established all fire losses with the exception of large mercantile establishments.

When property is insured we use the figures of the insurance adjusters for our loss total.

We have found fire department estimates are comparatively accurate in dwellings, but on mercantile establishments they have not been accurate especially in estimated losses in stock, fixtures and equipment.

Zephrin F. Drouin, Chief, Lewiston, Me.: We make an estimate of losses at the time of the fire. When property is insured, we use insurance adjustment figures.

We have found that our estimates are reasonable accurate on small fires.

HERE IS THE QUESTION

Does your fire department estimate losses to buildings and contents by fire?

If not, how are loss figures secured?

Do you use insurance adjustment figures (when property is insured)?

Have you found that fire department estimates are reasonably accurate?

Insurance companies are apt to be very lenient when adjusting small fire losses. This reflects mostly on the insurance agents who are authorized to adjust fires up to $100.00 and larger firms up to $500.00.

Marvin K. Evans, Chief, Lynchburg, Va.: In all cases in which the loss is covered by insurance, we use the insurance adjuster's estimates, and when the loss is not covered by insurance, I estimate the loss.

J. H. O'Neill, Chief, Niagara Falls, N. Y.: Losses are estimated by the assistant chief in attendance. Fire insurance adjusters have said that the estimates are reasonably accurate.

Hugh F. Fisher, Chief, Lansing, Mich.: We estimate losses to buildings and contents at the time of fire. At the end of each month we get the final adjustment on all fires in insured property from insurance adjusters.

Our estimates are not always correct.

R. A. Kelley, Chief, Davenport, Ia.: If property is not insured, the Fire Department makes an estimate of the loss.

On insured property we get the insurance adjustment figures after the claim has been paid.

Claude Osborne, Chief, Decatur, Ill.: We estimate losses to buildings and contents. We have found our estimates are reasonably correct although once in a while our estimates may run a little over or under on liquor stores or churches. But these are always corrected when we receive the insurance adjustment figures.

Frank D. Shaw, Chief, Greensboro, N. C.: We use the figures of the Fire Companies' Adjustment Bureau and in cases where they do not make the adjustments, we make our own estimate of the damages.

Ambrose Saricks, Chief, Wilkes-Barre, Penna.: When property is insured we use the figures from the Fire Adjustment Bureau. Otherwise, we estimate losses.

Michael J. Shea, Chief, Fitchburg, Mass.: We estimate losses to buildings and contents by fire. The Insurance adjustment figures are used in the case of insured property. We find that in some cases these figures are too liberal.

A. J. Cote, Chief, Woonsocket, R. I.: The insurance company estimates losses in the case of insured property and the Fire Department when no insurance is carried.

W. J. Mohr, Chief, Santa Monica, Cal.: We estimate small property losses and double check with replacement cost or adjustment made.

We cooperate with the insurance company if their adjustment is not out of reason, and do not enter our loss until the final adjustment is made by them.

As Santa Monica is a residential city, property damage is mostly concerned. We are reasonably correct in our estimates of these losses. On business losses, we work with the company and use their figures, if they are reasonable

L. B. Canfield, Chief, Beverly Hills, Cal.: When property is uninsured we take the loss at the replacement or repair costs. We use insurance figures when the property is insured.

Henry L. Hilles, Chief, Tucson, Ariz.: We have found fire department estimates to be unreliable. We use insurance adjustment figures when property is insured.

L. A. Moore, Chief, Fresno, Cal.: We take the insurance adjuster's figures, both on insured and uninsured property.

Thomas D. Blake, Chief, Rockford, Ill.: If no insurance is carried, the one having the loss gives us the amount; otherwise we take the adjustment figures given us by the insurance companies.

T. H. Gordon, Chief, Great Falls, Mont.: The Fire Department does not estimate fire losses. The losses are left to The Fire Adjustment Company. Where no insurance is carried, estimates are made by the department.

Our estimates were a little more conservative at times, so we gave it up and waited for the adjustment company figures.

H. P. Constantine, Chief, Bangor, Me.: We do not make a practice of estimating fire losses, not for our records anyway. We leave this to the insurance adjusters. We do it only in cases where there is no insurance, or where we are unable to get the insurance company's loss figures.

We furnish the Fire Companies Adjustment Bureau, and any local insurance companies with a return stamped postal card. They in turn furnish us with the losses. We may add here, that our local fire adjustment bureau has been very good in this. There are cases in the run of the year where the property suffering the loss has not been insured, or where we are not able to get the insurance company figures on the loss. We then form an estimate for our records. These are practically all small losses.

Fire Department estimates are reasonably accurate on small losses, but fire officers should not, for the records anyway, estimate large losses. It is a study in itself for insurance company adjusters.

William Meinheit, Chief, Berkeley, Cal.: We make estimates of losses before leaving the fire grounds, which are entered on our loss record card as tentative figures only. The loss is then followed up through insurance carrier and the adjuster and adjustment figures are then entered as permanent record. Losses on uninsured properties are taken from figures supplied by the contractor making repairs or persons making replacements. If the above noted sources of loss information are lacking, then we do use our own estimate which we have found to be reasonably accurate in comparison with like or comparable experiences.

W. J. Taylor, Chief, Burbank, Cal.: This department estimates fire losses to buildings and contents. We use insurance adjustment figures on insured property. On the uninsured property our captain of the Fire Prevention Bureau, who has had considerable experience along this line, makes an estimate of loss. We find that most uninsured property is confined to residences and household furnishings which can be readily estimated by the

(*Continued on page* 182)

HERE IS THE PROBLEM FOR THE NEXT ISSUE

What have been the principal causes of accidents to personnel in your department during the past two years?

What methods do you suggest for preventing similar accidents in other departments?

What were the causes of accidents involving fire apparatus in recent years in your department?

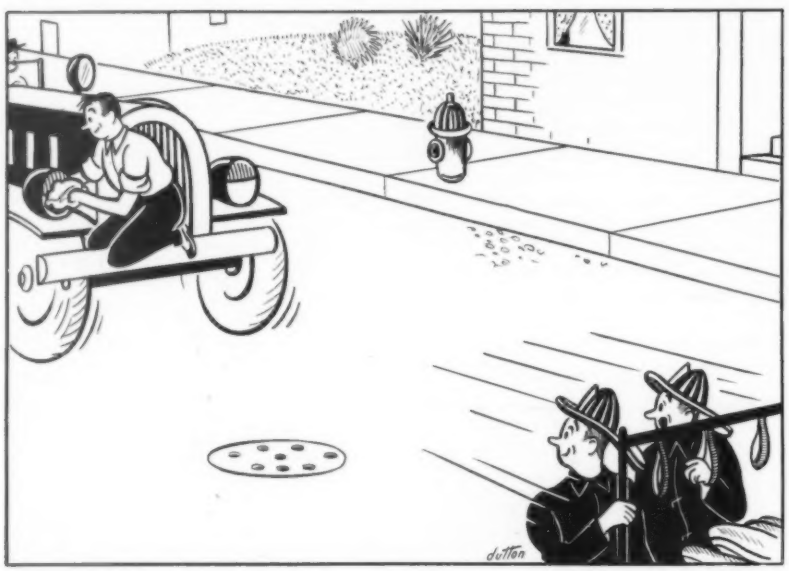
What suggestions would you make for preventing accidents in other departments?

If you have had no accidents, or less than the average, to what do you give credit for this good performance?

Tanks Saved as Fire Sweeps Oil Terminal

These three huge storage tanks were saved from flames by fire companies as the Standard Oil Company terminal in Richmond, Va., was swept by fire that destroyed more than 35,000 gallons of fuel oil.

FALSE ALARMS



"When Clancy Starts to Polish Those Headlights, He Forgets About Everything Else!"

Confused

Lawrence Cramer, youthful, unimpressive-looking governor of the Virgin Islands, called upon the Secretary of the Interior. He gave his name to a doorkeeper merely as "Cramer," and sat down to wait. Thirty minutes passed, then 45.

The young governor concluded that he had not made his name and position clear. So he approached the doorkeeper and explained that he was governor of the Virgin Islands.

Flustered, the man picked up the telephone.

"Mr. Secretary," he said, "there's a virgin here from Governor's Island."

It Might Work

The fire truck on a rural run came to a sudden standstill on a country road. The driver descended, diagnosed the trouble and then applied at a neighboring cottage for assistance.

"Pardon me," he said to the old woman who answered his knock, "do you by chance possess any lubricating oil?"

The old woman shook her head.

"Any oil will do," said the motorist, hopefully "castor oil if you have any."

"I ain't got it," said the old woman, regretfully, "but I could fix you up with a bit o' salts."

Excited Patient: "Let me up—I want to get out of here!"

Nurse: "Lie down and be quiet. The doctor is a very excitable man and loses his patience easily."

Patient: "So I heard and that's why I want to get away."—Health Digest.

A city girl went swimming in the nude in a secluded mill pond. Along came a boy, who started to tie knots in her clothes. She grabbed up an old wash tub and holding it in front of her marched toward the boy, saying, "You little brat, do you know what I'm thinking?"

"Yes," said the little brat. "You are thinking that tub has a bottom in it."

Politeness

Natives of the Carolinas are noted for their great politeness. Once in the old days, a passenger was enjoying a smoke in the smoking car. From time to time he expectorated with great satisfaction out of the open window.

The rush of air caused by the fast-flying train must have interfered with his aim, for a tall, lean Carolinian in the seat just back of him touched him lightly on the shoulder and remarked with great politeness: "Mistah, you done spit on me foh times an' I ain't said nothin' about it. I wouldn't say nothin' now, ceptin' I got on my Sunday-best suit of clothes."

To New Tenant: "You know we keep it very quiet and orderly here. Do you have any children?"

"No."

"A piano, radio, or victrola?"

"No."

"Do you have a dog, cat or parrot?"

"No," but my fountain pen scratches a little sometimes."—Building Business.

We Never Know

The builder had to go away on business and Tony was left in charge to interview any prospective buyers. He showed off the property and was doing well when a client exclaimed:

"Yes, I like the house. The only thing that worries me is that it is so near that ugly explosives factory that the view is spoiled."

"Don't let that worry you, sir," said Tony. "The explosives factory might blow up any day."

"Check Your Hat, Mister?"

THE PROOF OF THE "PUDDING" IS IN THE "EATING"

PHONE 3-9136
1971 GODFREY AVENUE, S. W.
GRAND RAPIDS, MICH.

Wyoming Township
KENT COUNTY, MICHIGAN

December 16, 1940

The Circul-Air Corp.
303 Dwight Building
Jackson, Michigan

Gentlemen:

It may be of interest to you that the hose dryer we recently purchased from you has given wonderful satisfaction.

On one occasion our fire department was called to a dump fire which lasted some five hours using practically all the hose, some 750 feet 2½ inch hose, which not only was water soaked but filthy from the dirt and debris of the dump. In coming back to the fire station the hose was all washed, laid neatly on the racks and within 3½ hours all the hose was dry. Ordinarily this would have taken two days to dry.

We want to assure you that we feel the money invested in this dryer was well spent and will pay dividends. We are glad to recommend it to any prospective buyer.

Sincerely yours,
HERMAN J. WIERENGA,
Supervisor-Wyoming Township

Saves . . . "Nearly 2 days Drying Time"

CIRCUL-AIR THE AIR-CONDITIONING **FIRE HOSE DRYER**

A Peacetime Asset—A Wartime Necessity

SAVES

building repair and construction cost — and improves new station design. **Immediate delivery from stock.**

Note Compact Size . . . and ease of loading and unloading.

CIRCUL-AIR USERS

Over 100 new installations this year in villages and cities of 500 to 1,500,000 population . . . and in Navy Yards, Army Camps, Air Bases, Chemical Warfare Service-Arsenals . . . and most of America's largest AIRCRAFT, TANK, ORDNANCE, SHIPBUILDING, ELECTRICAL, AUTOMOTIVE, TEXTILE and CHEMICAL FACTORIES.

★ *PRIORITY ASSISTANCE GIVEN IF NEEDED* ★

THE CIRCUL-AIR CORPORATION
6339 East Palmer ··· Detroit 11 Mich.

Fire cannot burn without air. With swift efficient action *C-D/Fog* completely surrounds fire with a blanket of carbon dioxide. *Air is sealed out.*

C-D/Fog is especially recommended for oil, gasoline, electrical, or chemical fires. Built by General Detroit, manufacturers of fire protection equipment since 1905, *C-D/Fog* comes from a distinguished line of fire fighters, including such famous names as Fire Guard, Alaskan, and Floafome. Like all General products, it is quality mass produced for prompt delivery to essential users.

Find out about *C-D/Fog* today! Mail the coupon and details will be rushed!

THE GENERAL DETROIT CORP.

Former Name The General Fire Truck Corp.

NEW YORK DETROIT CHICAGO

Distributors in all principal cities

West Coast Affiliate: The General Pacific Corp., Seattle, Los Angeles, San Francisco.

THE GENERAL DETROIT CORP.
2210 East Jefferson Ave., Detroit 7, Mich.
SPEED complete details to:

*Name*_____

*Title*_____

Just attach this convenient coupon to your letterhead and mail.

WALKIE-TALKIES SEEN AS WEAPON AGAINST CRIMINALS AND FIRE

Wartime Advances in Equipment to Be Reflected in Peacetime Applications

MILITARY needs have brought such advanced developments in radio communication that firemen and policemen in the postwar period may be equipped with walkie-talkies to fight fire and crime with radio.

And through the same medium doctors may keep in touch with offices and hospitals, and operators of trains, busses, taxis and trucks would receive their instructions from headquarters while on the move.

H. F. Mickel, manager of the Police and Emergency Communications Section of RCA Victor, Camden, outlined the foregoing possibilities at a recent conference of the International Municipal Signal Association in Philadelphia.

Although he declared the possibilities almost limitless in communications and industrial electronics, Mr. Mickel emphasized there would be no sudden transition from the present status. Rather, he said, existing equipments and methods would be improved and expanded instead of being rendered obsolete overnight.

As an early possibility in the public safety field, the RCA engineer suggested that firemen carrying walkie-talkie sets small enough not to hamper their movements could be directed inside a blazing building by a superior officer on the outside who would be supplied the necessary information by the men throughout the structure. The same technique, he said, could be employed in combatting forest fires.

Higher Frequencies Probable

"It is probable that future emergency communications systems will tend toward the use of higher frequencies in the radio spectrum," Mr. Mickel said. "Again let me point out that this is the result of gradual evolution rather than the application of a radically new principle. The first police and fire department radio systems operated on medium frequencies just above the standard broadcast band. A few years later a gradual swing to the use of channels in the 30 to 40-megacycle band began. However, this transition did not render the original systems obsolete and unusable.

"The first automatic radio relaying systems in the emergency communications service were in the 30 to 40 MC portion of the spectrum, but just prior to the war, a group of channels in the 116 to 119 MC band was allocated for such use. It can be seen, therefore, that the gradual tendency is toward higher frequencies and it is believed that the trend will continue.

"The use of higher frequencies will result in lower-powered transmitting equipment, smaller-sized apparatus and highly efficient antenna systems. Higher frequency systems may be more readily controlled to cover the exact areas desired, thus making more efficient use of available power. Higher frequencies will also result in the availability of a large number of additional channels. Perhaps this will open the way for many new radio applications and services."

Higher frequencies also will lead to the more common application of automatic relaying units, Mr. Mickel said. Where great distances are to be covered and direct transmission is beyond the range of available equipment, automatic relaying or repeater units may be interposed to pick up the transmitted signal and pass it along to the receiving point.

Automatic Relaying

"An example of automatic relaying is found in the radio system in operation on the Pennsylvania Turnpike," he continued. "Here, unattended relay stations pick up and pass along transmissions from one end of the turnpike to the other. A message originating at any point on the turnpike is clearly heard by all the cars patrolling the road, by all the toll office personnel, by Pennsylvania State Police headquarters in Harrisburg and Bedford and in all maintenance buildings along the right-of-way.

"This system has been in operation for more than two years and effectively proves the practicability of such apparatus. The use of higher frequencies will make such systems more common and easier of accomplishment."

As a development of the present-day fire alarm system, Mr. Mickel visualized a standard radio receiver which, when switched off at night, would maintain in operation a tiny receiver which would connect the loudspeaker and permit transmission of any desired message when actuated by a specific signal from headquarters. Such a device would have wide application in police and fire systems for calling out reserves or off-duty members, he said.

"We will also see electronic heat indicators for actuating fire alarms," the engineer said, "and the burglar alarm of tomorrow may readily use invisible light rays to prevent any visible indication that such a detection device is in operation."

St. Lawrence Firemen Receive Certificates

Over 100 St. Lawrence County volunteer firemen have received certificates for completion of a fire fighting course sponsored by the State of New York in cooperation with the State Education Department. The program was part of the state's war effort. Classes were held at four central points by Chief Charles Vogel, Chatham, N.Y. Completion of the course gives the firemen thirty hours credit from the University of the State of New York which can be used in educational institutions should they desire.

SANFORD D. DEWEY.

Photo of Battleship North Carolina taken from accompanying vessel. Official U. S Navy Photograph.

Proudly She Sails
ASSURED OF HER MIGHT

Confident in the efficiency of her offensive armament — there is equal assurance in her defense against attack, strengthened by recent developments in fire protection.

The performance of National Fire Foams in extinguishing serious fires is acknowledged in the following recent telegram:

". . . Your Foam Fire-Fighting Apparatus is used extensively on naval vessels and has been instrumental in reducing losses due to oil and gasoline fires. You are to be congratulated on your record in producing this excellent fire-fighting equipment, which plays such a vital part in safeguarding our ships and the men who sail and fight on them.

C. L. Cochrane, Rear Admiral, U.S.N.
Chief of the Bureau of Ships"

National Foam Fire Protection has been adopted by most large oil refineries and many other important industries.

★ ★ ★ ★ ★ ★

IN FIRE DEPARTMENT SERVICE

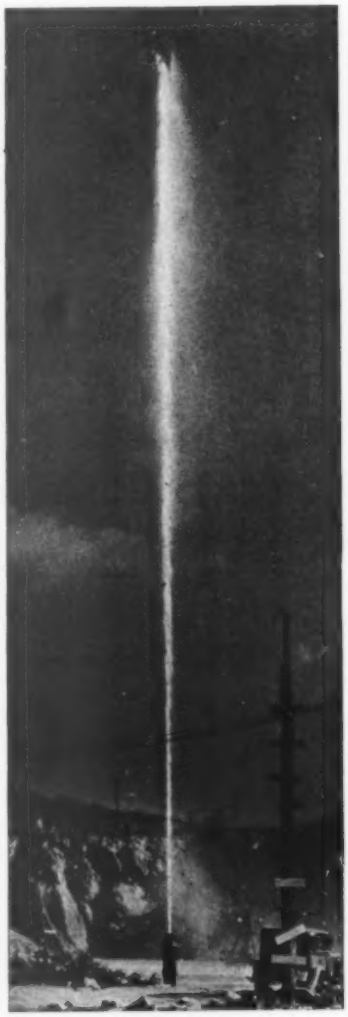
National Foam System has equipment especially designed for the use of Fire Departments to meet all types of fire fighting requirements. Complete engineering service available.
The experience of our engineering department is at your service.

NATIONAL FOAM SYSTEM, INC.

Specializing in Foam Fire Protection

16:32 Sansom St., Philadelphia, Pa.

STREAM from ONE HALE SKID UNIT



This stream was supplied through a 1½" nozzle, from draft, by *one* HALE 500 Gallon Skid Unit mounted on a Trailer.

Write today for the catalog and folders on the complete line of HALE PUMPS.

HALE FIRE PUMP COMPANY
CONSHOHOCKEN, PA.

INTERESTING HEAT PHENOMENA AT DALLAS MAGNESIUM FIRE

Violent Up-Draught Draws Cold Air Along Ground to Fire; Interesting Effects Produced

THE following is the report of Chief L. M Funk of the Dallas, Texas, Fire Department, on the magnesium fire which occurred in that city last December 15. Although the account of the fire was published in the January issue of FIRE ENGINEERING, the Editor feels that the complete story will be interesting to the readers in view of the fact that magnesium fires are apt to be more frequent in the future because of the increased uses to which that metal is being put.

OWNER:

Austin Bridge Company,
Dallas, Texas.

LOCATION OF PLANT:

1301 Singleton Blvd.,
In Dallas County—(Not in corporate limits)

Buildings

The plant consisted of a succession of steel frame, iron clad buildings, the length of which extended north and south, all of which had a common north end line, but were of various lengths, having been erected at different times.

The buildings were divided into two groups with a 20′ alley or passageway between. This was crossed with a 12′ connecting tunnel of wooden construction. All partitions were broken with large openings giving easy access to any part of the plant. There were no fire doors, or other closing devices on any of these openings. Majority of all partitions were of wooden construction. The entire plant covered a concrete floor area of approximately 50,000 square feet.

Looking at the plant from the north end, (facing south) and beginning at the east, or left side, we number the buildings as follows for the convenience of placing contents and areas.

No. 1—With a floor area 50′ x 75′ was occupied as a repair shop, and was of recent construction.

No. 2—With a floor area 50′ x 222′ was occupied as a warehouse for storage of stock metal and finished bomb cases. At the time of the fire there was 1,700,000 pounds of magnesium (17 car loads) stored in this area, a majority of which was in pigs, or ingots.

No. 3—With a floor area 50′ x 182′ was occupied as a foundry consisting of 20 furnaces and pots for running magnesium bomb cases. (The fire originated in this room.)

Immediately following this area was a 20′ alleyway which was broken with a 12′ wooden tunnel connecting the two groups.

No. 4—With a floor area 46′ x 182′ was also occupied as a foundry, and contained 10 large furnaces and pots.

No. 5—With a floor area 46′ x 222′ was occupied as a machine shop where the bomb cases were finished.

No. 6—With a floor area 46′ x 182′ was also a machine shop supplementing area No. 5—Adjoining this on the west were dressing rooms, showers, toilets, etc.

The Fire

After the plant was in operation it was discovered that the ventilating louvers over the furnaces did not adequately dissipate the heat gases. A number of them were removed and large fans installed, the framework of which was of wooden construction.

The afternoon shift turned out for lunch at 8:00 P. M. and as the employees were leaving the building large, live embers were noticed falling from one of the ventilating fan cases in the east foundry (Area No. 3)

The foundry pots contained molten metal at this time, one of which became ignited and erupted, scattering burning magnesium over a large area. Several piles of recently run bomb cases were instantly ignited. The fire was then beyond control.

The Dallas City Fire Department received the alarm by telephone at 8:04 P. M., and immediately dispatched one engine company, which arrived at the scene of the fire at 8:10 P. M. The officer in charge immediately called for a chief officer and additional companies. At 8:14 P. M., two additional engine companies, the writer, and the First Assistant Chief were dispatched, all of whom had arrived and were in action prior to 8:30 P. M.

Three 2½" lines were laid in, one of which was later wyed with two 1½" lines and used for spot work. At no time were lines directed at burning metal.

Areas No. 1, 2, & 3 were completely involved at 8:30 P. M. Lines were placed at each end of the 20′ alley-way seperating areas No. 3 and 4, and one line placed inside of No. 4 at the entrance of the 12′ wooden tunnel. All firemen were instructed to hold the east wall of No. 4 at all cost, and to positively not spray water on the burning metal.

The slope of the entire floor area was from the northwest to the southeast. The bulk of the storage was in the southern portion of area No. 2. The flow of water on the floors was directly towards the seventeen car loads of magnesium stored in the warehouse, the upper portion of which was burning furiously by 9:00 P. M. and as large pieces of this burning metal dropped into the water on the floor heavy explosions or eruptions resulted. By 9:30 P. M. the entire storage of metal was burning, and the explosions were momentarily increasing in violence.

One noticeable feature of the explosions was the conical shape of the eruption. The force did not spread near the ground, but came up with a gradual spread like a large cone, and immediately following the explosion all loose particles were drawn into the burning area rather than being blown away.

By 10:00 P. M. the vibrations from

EVER BEEN UP IN ALASKA?

...or in Greenland?...or Iceland?

Thirty, forty, fifty degrees *below* zero. And the wind cuts through you like a knife.

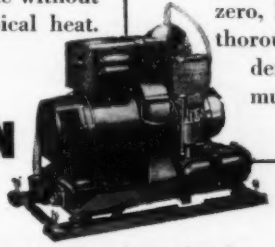
Nevertheless, planes have to fly and men have to work... *and so does the equipment they use.*

Take, for example, the Homelite Portable Generators that are carried out on the snow-covered fields to charge batteries and test electrical equipment on planes... what would happen if they couldn't stand the weather and froze up every time they stuck their noses out in the open?

Well, they don't freeze up. They *can't* freeze. For they're air-cooled gasoline-engine-driven units, designed and built to operate without trouble in brutal sub-zero weather or in blistering tropical heat. They never let you down.

How We Do It

Weather conditions of the frozen north are duplicated right in the Homelite plant. In a specially constructed room, where the temperature is kept far below zero, Homelite units undergo thorough performance tests under the same conditions that must be faced in the Arctic.



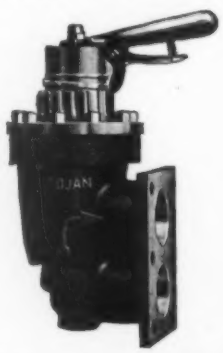
HOMELITE CORPORATION
PORT CHESTER, NEW YORK

ROSS
RELIEF VALVES

1" to 2½" female threads

MODERN PUMPERS

demand these rugged, modern relief valves. Their simplicity and responsive dependability make them a must. Made in sizes from 1 inch to 2½ inches with capacities up to 1600 g.p.m. and pressures up to 750 lbs. Write for descriptive literature describing the complete line of



TRAILER PUMPERS

Trailer pumpers require valves made especially for this type of work, such a valve is the ROSS Trailer Pump Relief Valve. Made in sizes from 1 inch to 2½ inches with pressure adjustments from 10 lbs. to 750 lbs. and capacities from 0 to 500 g.p.m. at 120 lbs. pressure.

ROSS VALVE MFG. CO
INCORPORATED
P.O. BOX 595, TROY, N.Y.

the explosions became so great that the men were ordered outside of building No. 4, and in a very few moments the south half of this building collapsed. The lines were immediately returned to cool this area. The peak of the fire was reached about 10:45 P. M. after which the explosions gradually ceased.

Although the fire was still burning at 10:00 A. M. the following day all danger from heat radiation was passed by 4:00 A. M.

Observation:

Some 70′ east of the warehouse (area No. 2) there was a metal building. Inside of which was a 4′ aisle next to the wall, beyond which was stored large bundles of an insulating material (Not rockwool). The area between the fire and this building was an open yard. The temperature was 21 degrees, humidity 69%. Wind was from north at 7 miles per hour yet the material inside this adjacent building became ignited (Extinguished with booster lines).

From 50′ to 100′ distance from the fire the ground was warmed sufficiently to melt ice. From 50′ up to within 18″ of the fire the water was quickly frozen. The ground area close to the fire was extremely cold. An extremely heavy draft of air existed near the ground at the base of the fire. This draft was not felt or noticed 75′ away.

The force of the explosions, caused by water running under the burning metal, was always up—never out. The portion of building No. 4, which collapsed, was pulled in rather than being blown out.

Firemen could not stand near the fire without protection to face and upper portion of bodies, due to the intense heat radiation; however they were uncomfortably cold when in a prone position at the same location.

Recommendations:

Both stock metal and finished products should be stored in small quantities—storage area should be diked or scuppered to prevent water flow beneath metal in case of fire.

All partitions should be of fireproof construction, and if of masonry all openings should have approved fire doors on each side of wall.

No wooden construction should be permitted in connection with this type of business. Close inspection and supervision should be maintained at all times. If inter-factory trucks and carts have metal wheels they should be equipped with drag-scrapers to prevent wheels picking up and carrying small bits of metal from machine shops to other parts of plant. (Scraps of metal were very noticeable in all areas of this plant.)

The illumination from this fire was easily observed 80 miles away. In Lewisville, Texas, 35 miles north of Dallas, the light was sufficient to easily read a newspaper.

Firemen subjected to the possibility of having to deal with this type of fire should be provided with protective colored goggles. After an hours exposure to the extremely white light produced by the burning metal other colors lose their identity. Red becomes olive drab, etc. Several hours exposure, although not direct, is extremely dangerous, and may result in painful, if not serious burns to the eyes.

Due to the extreme heat radiation provision should be made to quickly spray water on all buildings or equipment whatever within a radius of 300′ or 400′. Even the metal cabs on dragline engines, and road graders 300′ from the fire were warped out of shape.

Immediately following an explosion, when the upward force had reached the peak, there would be a fountain shaped spray which spread over a large area. Particles of burning metal ranging in size from marbles to golf balls would fall. When these bits of burning metal landed on metal roofs they immediately burned through, dropping to the area below. One such fell upon a gasoline tank truck parked some 400′ away, results—the truck was completely destroyed; being filled to capacity prevented an explosion and an additional serious fire.

Respectfully submitted,
L. M. Funk, Chief,
Dallas Fire Department.

Market Destroyed by Fire

The first alarm for this market fire was received at Engine Company 9 of the Los Angeles County Fire Department at 7:06 a.m., just prior to the market's opening for the day's business. Upon the arrival of the fire department at the fire at 7:10 a.m. the officer in charge had additional help ordered. The snapshot was taken at 7:15 a.m. Two 2½-inch lines are working and a third is being laid. There are also two 2½-inch lines working in the rear of the building. The estimated loss was placed at $100,000.

● The wartime need for conserving fire hose emphasizes the value of Republic's Provar Process protection against mildew and rot. Cotton jackets treated by this process defy the destructive action of these organisms. Until normal production of Republic Fire Hose is again permitted, Provar Process will help preserve millions of feet of hose now in use. Investigate it on your next requirements.

REPUBLIC RUBBER

YOUNGSTOWN • 1 • OHIO

DIVISION OF
LEE RUBBER & TIRE CORPORATION

The element of time is of first importance in the successful treatment of burns. If a burn is treated within 15 minutes after it occurs, the probability of blister formation is reduced to a minimum. But if time is wasted before proper treatment is started, serious complications and infection may follow.

When using Gebauer's TANNIC SPRAY in the treatment of burns, the factors involving time-loss are eliminated. This preparation is a stable solution of tannic acid ready for immediate use. Packaged in a sturdy amber bottle having an automatic dispensing cap, which permits the projection of the solution in the form of a fine jet stream. Upon application the solvent evaporates rapidly, covering the burn with an evenly applied, dry and flexible film of tannic acid.

Gebauer's TANNIC SPRAY is a practical *first* first-aid treatment for first, second, and small area third degree burns. Write for literature.

THE GEBAUER CHEMICAL CO.
9410 St. Catherine Ave. • Cleveland 4, Ohio

"The Superior"
A MODERN and PROVEN
LIFE NET

The SUPERIOR LIFE SAVING NET is stronger than any other, because of the tested breaking strength of 1,800 lbs. of each individual rope.

The direct pull shock absorber system eliminates all friction and its greater resiliency provides for a safer, easier landing.

Made of Chrome Molybdenum steel, the frame may easily be folded for storage within a few seconds.

For the utmost in LIFE SAVING VALUE . . . "SPECIFY SUPERIOR".

For ECONOMY, have your old net converted into a "SUPERIOR".

Other SUPERIOR Products:
Training Nets and Structures
Ladder Belts
Life Size Training Dummies

William Moeller
Designer Consultant

SUPERIOR FIRE EQUIPMENT CORP.
235 E. 42nd St. New York, N. Y.

PREVENTING TANK EXPLOSIONS DURING RESCUE OPERATIONS

Use of Fog Suggested as a Means of Checking Development of Explosive Conditions

By Joseph J. Davis
Deputy Chief, Los Angeles County Fire Department

THE article "Explosion of 'Gas' Tank Car Kills Three and Injures Eight" appearing in the October, 1943, edition of FIRE ENGINEERING raises a thought-provoking problem for the earnest consideration of the Fire Service. The disastrous incident reported by Chief Waldo Merrill of the Council Bluffs, Iowa, Fire Department, in which three men, including Fire Department Driver John Peterson, lost their lives, and eight others were seriously burned or injured, was the result of an explosion occurring while rescue of an unconscious mechanic was under way inside an almost empty gasoline railroad tank car. Driver Peterson with oxygen mask removed but still affixed to his body, was steering the body of the victim into the dome when the explosion or flash fire occurred.

It is the opinion of Chief Merrill that the flash fire was caused by a spark from an unknown source and not by static electricity. The Chief further stated, "If this condition should re-occur, I can see no method than what was done, other than to render a silent prayer and hope that there will be no explosion until the rescue is completed." Just so long as there is no regulation against entering a tank before it is freed of flammable vapors or a workman carelessly jeopardizes his life in recovering a dropped wrench from such a tank, a like tragedy can strike any Department of the Fire Service at any time with more or less devastation than the fateful happening in Council Bluffs. Because of this the writer offers this paper as a second discussion in what might be termed a round-table debate which he trusts will stimulate interest, interchange of ideas, definitely channeled laboratory tests and the ultimate production of absolute preventive measures. The first discussion can be considered as having been given by Lt. Walter B. DeBoer of the Denver, Colorado, Fire Department, who, in a letter to the Fog Nozzle Company of Los Angeles, California, advocated the use of water fog as a medium to reduce by dilution the vapors below the explosive range. The full text of Lt. DeBoer's letter is:

"In reading the October issue of FIRE ENGINEERING magazine, I came across an article which, I believe, should be of interest to both your company and to all firemen.

"The name of the article is 'Explosion of Gas Tank Car Kills Three and Iniures Eight.' (It appears on page 633.) In this article it tells the story of what was done and ends with this. 'If this condition should re-occur, I can see no other method than what was done, other than to render a silent prayer and hope that there will be no explosion until the rescue is completed.'

"My contention is this: Had a . . . (fog nozzle.—Ed.) been used to cover the inside of the tank car for a brief period and then held as a protective cover over the dome, there would have been no explosion. First due to the greater humidity created inside the tank car and second due to the dilution of the vapors present both inside the car and outside would have made an explosion practically impossible. The rescuer was protected from asphyxia with the self-contained gas mask and had he had this other inexpensive protection he would probably be alive today.

"It is not my intention to point out the defects in the procedure of this fire but to point to a solution of a problem which has been stated as almost unsolvable. We can all 'second guess' very nicely and tell how we would have done, but had we been on the spot at the time probably would not have done as well. We can, as firemen, offer soliutions to these problems as we see them, or at least attempt a solution.

"I must admit, in fairness, that I have never had a like situation, but through study the above answer is an answer to the problem and I think that your Company could make an experiment and prove the point.

"If you think any of the above has merit, feel free to use it but I do wish you would inform me of your findings."

The Lieutenant's letter was referred to this Department for consideration and report on the practicability of water fog, no doubt because of the Department's universal adoption of water fog equipment. To amplify this statement it may be said that the Department pioneered in the development and acquisition of water carrying fire apparatus. Every one of its more than ninety pieces, from a 2500 tank capacity behemoth with its large fog applicators to the 70 gallon tank capacity half-ton Pickup Patrol car with one inch fog nozzle, is fully equipped with water fog appliances to assure the water supply lasting longer; to make extinguishing efforts more positive with increased personnel safety; and to reduce water damage by fog application. Knowing the proven effectiveness of water fog on structural, oil or forest fires, the writer was immediately in agreement with Lt. DeBoer. However, for the purpose of this discussion, it seems wise to (1) consider certain happenings at the disaster from information contained in Chief Merrill's reports; (2) set forth possible direct or contributing factors as to the cause; and (3) list measures that might prevent a similar disaster.

Fight Fires Effectively

and with greater safety

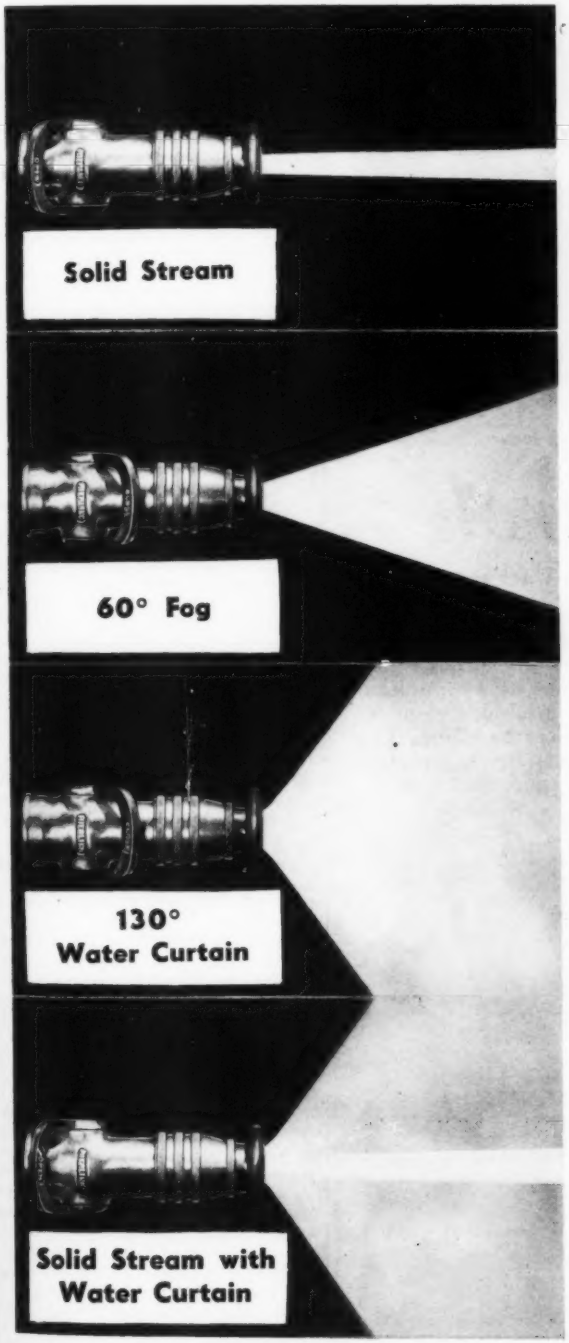
Just a twist of the wrist gives you:

—Solid Stream

—Fog (any volume)

—Solid Stream and Fog Together

—Solid Stream and Water Curtain



●

The Riepling

UNIVERSAL NOZZLE

Does just that!

It's the patented design and mechanical superiority of this nozzle that give you what no other nozzle can give—ALL the stream selections with one nozzle PLUS your choice in an instant!

Correctly named, the Riepling UNIVERSAL Nozzle, with a six-year record of efficient performance, gives you, with those four stream selections, greater efficiency in subduing fires and a greater measure of safety for the men who fight them.

It's the speed and ease with which you get ANY of these streams that stamp the Riepling Universal as the all-around superior nozzle.

Used by U. S. Coast Guard Vessels, U. S. Navy air stations, U. S. Army air fields, and by steel factories, chemical industries, oil and gas companies, mines and shipyards, and . . . of course . . . hundreds of municipal fire departments.

Send for Complete, Detailed Information

Get all the data . . . figures as well as facts . . . which tell the whole story. Inquiries from dealers invited. You'll be interested in what we send you by return mail.

L. N. Curtis *and* **Sons**

Emergency Equipment

451 Hudson Street Oakland 9, California

Quick...and Sure!

That's a brief recipe for successful fire-fighting . . . get there *quick*, and go into action with hose you are *sure* won't let you down.

GOODALL Booster Pump and Chemical Engine Hose earned its present high rating among the Nation's fire departments through consistently dependable performance. Backed by GOODALL's reputation for quality, it has ample strength to withstand any pressure requirements, yet is light and flexible enough for fast, easy handling. The two brands described below can be bought and used with complete confidence.

"STONEWALL"
Moulded and Braided

Provides the advantage of long lengths and fewer couplings. Furnished with or without Underwriters' label. ¾" in 500-foot lengths; 1" and 1¼" in 250-foot lengths. Three braid.

"'76 BRAND"
Wrapped Construction

Strong, kinkproof, yet very flexible and easily coiled. Furnished with or without Underwriters' label. Made in ½", ¾" and 1" in 250' lengths, and in 1¼" and 1½" in 100' lengths.

This informative booklet, HOW TO SAVE FIRE HOSE, contains many helpful suggestions. Write for a copy.

GOODALL RUBBER COMPANY, Incorporated

GOODALL RUBBER CO. INC. R C C

WE ARE PARTICIPANTS IN THE OWNERSHIP AND OPERATION OF GOVERNMENT SYNTHETIC RUBBER CORPORATION

MAIN OFFICE—6 S. 36th STREET, PHILADELPHIA 4, PA.
THE GOODALL-WHITEHEAD COMPANIES
Branches and Distributors from Coast to Coast

Factory—Trenton, N. J. (Est. 1870) 74 Years of "Know How"—Our Most Valuable Commodity

1. Happenings at the disaster: Significant was the fact that the temperature was around 91°, and relative humidity some 38% at 5 p.m., the approximate time of the explosion. Such a relatively low humidity in the climatic conditions encountered in the middle west would be conducive to the building up of excessive static electricity charges with the high temperature nullifying any formation of condensation on the interior tank surfaces which, if present, might have effectively drained off a considerable degree of the static charge.

A particular point of interest was the action of Driver Peterson in removing his oxygen mask apparently in order to negotiate more easily the opening in the baffle plate, or to effect clearer vision. The question naturally arises, "Did Driver Peterson close the valve at the mask or was the oxygen allowed to flow?"

The small 15-inch diameter opening into the dome made it practically impossible to avoid contact between it and the rescued person's body. Whether the rope used to hoist the body was clear of the metal surface at the time of the explosion, is not known.

It is reasonable to assume that Driver Peterson entered the tank shod with leather soled shoes and whether he had donned a turnout coat is not known, but it seems doubtful this would be the case because of the high temperature.

Chief Merrill very well stated that the rapid heating of the victim's clothes as the body was raised into the dome space would result in immediate change in the gasoline vapor percentage.

Direct or Contributing Causes

2. Possible Direct or Contributing Causative Factors: (a) Oxygen escaping from mask inside of tank creating explosive mixture which could ignite spontaneously. Such a cause is possible, but improbable, as thousands of tests for sulphur and BTU content in flammable vapors where the vapor is placed in a bomb along with oxygen under 400 or 500 lbs. pressure, have never produced a premature explosion. An explosion can be caused by oxygen coming in contact with lubricating oil in the oxygen lines.

(b) Matches in pockets of men involved: Chief Merrill indicated this to be a possible cause.

(c) Friction of rope, belt buckles, dome cap or nails in shoes: If Manila rope (known for its conductivity of electrical current) was used and allowed to contact the side of the dome opening, it could have been the cause either by friction or through electrical potential setup in the tank, due to possible failure of car grounding device, it being assumed rails upon which the car rested were bonded because of electric signal system.

(d) Static: Chief Merrill was of the opinion that static electricity was not the cause, because of the slow motion of rescue operations. However, consideration must be given to static electricity as the cause. The high temperature and low relative humidity were conducive to building up a considerable potential of static electricity. A factor not to be overlooked is whether either the victim or the rescuer was wearing rayon underwear. The writer was at one time quite conversant with static electricity in the middle west, and has noted its almost total absence on the Southern California

Coast. For the past three months Southern California has been subjected to low humidity, and the writer has noticed that during this period, although he lives within 1½ miles of the ocean, upon removing a rayon sport shirt after working in the garden, it gives off static freely in being pulled over his head. During the preparation of this article he has, through slow motion, been able to produce a static spark from this rayon garment. Therefore, based upon the existing climatic conditions at the scene, it is his belief that static electricity was anything but a remote possibility as the cause.

Undoubtedly the lean mixture in the upper section of the tank, particularly between the baffle plate and the top of the dome, was rapidly enriched from the heating of the victim's clothes, and the resultant mixture came within the explosive range coincident with one of the causes above listed.

3. Preventive Measures: Because time was the essence in the rescue of the unconscious mechanic, it did not permit the use of steam to free the tank of flammable vapors. Further, steam could not have been used because of the heat causing burns. Likewise prevailing methods such as the use of carbon dioxide or the exhaust from a gasoline engine, produce inert gases which would intensify the asphyxia.

In the absence of any approved and immediate method of freeing a tank of flammable vapors, it is to be assumed that all means must be taken to prevent ignition of vapors contained within, to dilute these inflammable vapors or at least to drive them from the immediate sphere of action and at the same time to reduce the chance of ignition by killing any spark that might be created by friction. At every such incident there would be two situations: (1) The tank would be filled with a mixture that is too rich to explode, and after the explosive area at the entrance to the tank has been passed, there would be no chance of explosion, regardless of the sparks created; and (2) the tank would be filled with an explosive mixture and extreme caution must be observed that no sparks are created at any point. Therefore, in agreement with the suggestion of Lt. DeBoer it is the opinion of the writer that both external and internal application of water fog under high pressure, in combination with certain common sense preventive measures, is the answer to the problem. A similar rescue should be attempted as follows:

Rescue Operations

1. The rescuer should be shod with either rubber boots or rubber soled shoes, clad in clothing of non-rayon material with no external metallic objects, and any finger rings or wrist watch removed or covered with rubber gloves. Further, all equipment used should be of non-ferrous metal construction.

2. Equip the rescuer with an oxygen mask. This oxygen breathing apparatus should not be used for more than 20 minutes after which it should be aired for not less than 6 hours before further use. The rescuer should be thoroughly familiar with its operation and warned against the removal of the mask while inside the tank because of the possible

FOUR WHEEL DRIVES
from ALASKA to the ATLANTIC

Four Wheel Drive Model KHS pumper recently delivered to the city of ANCHORAGE, Alaska

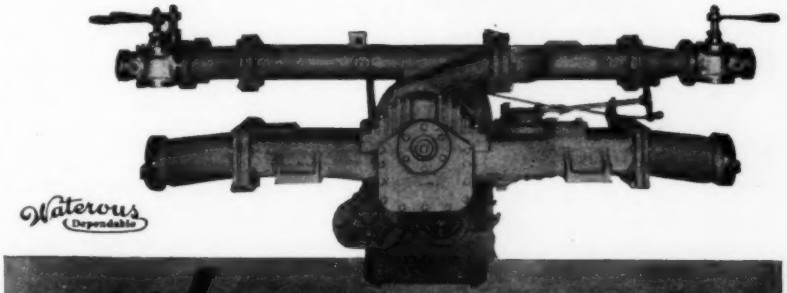
FOUR WHEEL DRIVE Fire Apparatus is built by the oldest and largest four-wheel-drive truck manufacturer. We are proud of the part that WATEROUS FIRE PUMPS have played in the record of dependability of FWD Fire Fighting Equipment.

Every WATEROUS Fire Pump is thoroughly tested under full power according to contract requirements. The advantages of our 58 years of experience are yours when you specify WATEROUS on *your* fire engine.

Literature on Request

WATEROUS COMPANY · SAINT PAUL, MINNESOTA

Also Manufacturers of WATEROUS Fire Hydrants



WATEROUS
CENTRIFUGAL-ROTARY
FIRE PUMPS

JANESVILLE QUALITY TURN OUT CLOTHING

Still Available

Our turnout suits are giving excellent satisfaction in most of the large fire departments throughout the U. S. and

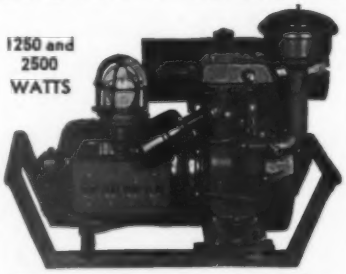
THERE MUST BE A REASON WHY SO MANY FIREMEN INSIST ON JANESVILLE QUALITY

Rubber and Duck Coats and Bunkers, Boots, etc.

JANESVILLE APPAREL CO.
JANESVILLE, WIS.

"U.S." PORTABLE LIGHT PLANTS

1250 and 2500 WATTS



This 1250 watt, portable unit has been designed expressly for fire department use. It is small, light, compact and equipped with carriers for easy portability out on the job. Air-cooled 4-cycle engine 2⅛" bore x 2⅛" stroke. 2.4 H.P. 2 gallon fuel tank. Quick starting. Also 2500 watt size.

LARGER SIZES AVAILABLE

Write for Catalog.

UNITED STATES MOTORS CORP.
430 Nebraska Street, Oshkosh, Wis.

danger of the explosive mixture of oxygen with prevailing vapors.

3. Before entry is made into the tank, the same should be provided with a substantial bond to ground, in order to drain off any existing static electricity.

4. Before making entry into the tank, the rescuer should also free himself of all static by touching the ground before commencing operations.

5. A water fog curtain should be applied directly over the opening to the dome to form a blanket to confine any explosive vapors that might contact external flame or spark, and to reduce the internal temperature of the tank while increasing its humidity.

6. The rescuer should be lowered by use of a cotton rope, all possible care being exercised not to permit any part of his clothing or the rope to touch the sides of the opening.

Application of Water Fog

7. A water fog applicator should be put into play directly over the rescuer and the victim. This water fog to reduce explosive hazard and afford protection in the following ways:

(a) Wash vapors from clothing and body of both the victim and the rescuer, reducing danger of rapid heating when passing through dome.

(b) Raise relative humidity in the tank, thereby reducing possibility of static electricity.

(c) Reduce internal tank temperature which, in turn, would retard the vaporization of any flammable liquid in the bottom of the tank.

(d) Displace the flammable vapors from the area where rescue work is being carried on—in effect, a water fog envelope to surround the rescuer and the victim, keeping vapors out and greatly reducing the chance of ignition by cooling any spark that might be created by friction.

(e) Smother oxygen from any possible source of ignition by diluting the area below the explosive range.

The exterior and interior water fog applications would tend to neutralize and hold constant both vapor and temperature in dome, thus permitting exit of both victim and rescuer, via rope hoist, without hazard even with high external temperature.

It is recognized that advocating the use of water fog will probably not be well received. Too many Fire Departments are not conversant with its general effectiveness. However, water fog has changed and will more and more continue to change the technique of fire control. In 1926 the American Petroleum Institute, at its Sixth Annual Meeting, was informed by Mr. G. O. Wilson of the Standard Oil Company of California, of his Company's exhaustive tests in perfecting steam protection for oil tanks. The result of the tests indicated that to make a combustible mixture safe it should be steamed to a temperature of at least 170° which corresponds to a saturation of about 40% steam by volume. It was pointed out—"It should perhaps be emphasized at this point, again, that the 'fog' which is commonly spoken of as steam, will not prevent ignition of a combustible mixture."

During the discussion following the paper Mr. Wilson was asked whether experiments were made using water in place of steam. Mr. Wilson answered—"We did a lot of work with that and were successful; but I have no data with me to tell you just how much water is needed; but water will extinguish vent fires. However, it is harder to get it uniformly distributed. Steam just naturally spreads itself all around when you turn it loose, but water tends to follow the line of the jet from which it is squirted out. We found steam was much more flexible and reliable than water. But I think a water smothering scheme could be worked out which would give reasonable protection under many conditions."

Mr. Wilson's statements were most prophetic, because since 1926 the use of water in the control of products of petroleum fires has been made positive by the development and adoption of water fog equipment. A local testing laboratory authority states that he does not believe water fog will displace enough of the flammable vapor to reduce it below the explosive range, because atomic laws prove that gases tend to maintain a uniform composition in a closed vessel, and it would be difficult to push away one gas with another.

Water Disseminated to Approximate Steam

Modern fog equipment with its required high pump pressures has made possible the dissemination of water in a condition closely approximating steam, and the extreme velocity with which it is disseminated would tend to displace or dilute in a sphere of placement the gas therein. Because of its cooling tendencies, water fog would undoubtedly retard the vaporization of any flammable liquid in the bottom of the tank and would thus prevent an increase of flammable vapor content. This same authority agrees that water fog extinguishes fire mainly through cooling action, it taking one pound of water to absorb 1000 BTU of heat. He then states in favor of water fog that it is quite possible that the cooling action of a fog curtain will keep the flammable vapors below the low limit of their incipient ignition temperature which is approximately 400° F. for petroleum vapors.

Until it has been proved that some other procedure is more effective, the writer confronted by a similar incident as that in Council Bluffs, would proceed with the use of water fog equipment as above outlined.

As previously stated, the writer submits this article to solicit interest and action and to the end that there will result a positive cure for a situation most malignant. While the Fire Service must lead, it is however also the responsibility of the manufacturers, producers and venders of materials producing explosive vapors, the public carriers transporting same, and research groups, to combine their facilities to produce the cure. In the process of gathering data, the writer contacted one of the largest public power companies in the west. The problem has intrigued this corporation, as in the production of power, a similar happening might take place, and it is preparing to conduct tests to neutralize the electric spark in a flammable atmosphere. The writer is gratified that at least his part in the discussion has provoked this first clinic.

"FIRE POWER"—

IS A LIABILITY

"Fire Power" is a two-edged force. Applied by our weapons of war, it is driving the enemy nearer and nearer to complete defeat. Generated by combustibles in a vital war plant, "fire power" can cause crippling delays of war production in a dozen other plants.

Cardox Fire Extinguishing Systems are helping assure plenty of *effective* fire power for our fighting forces by guarding against *destructive* fire power in plants producing such critical war products as:

Airplanes, Airplane Parts, Armor Plate, Aviation Carburetors, Aviation Engines, Cold Strip Steel, Electric Power, Engine Parts, Forgings, Motor Fuel, Plastics, Processed Fabric, Rubber Products, Solvents, Tanks, Tank Engines.

An extremely wide variety of indoor and outdoor hazards—large or small—can be efficiently protected by individually engineered Cardox Fire Extinguishing Systems. By instant smothering of fire and cooling of combustibles through mass discharge of low pressure, low temperature carbon dioxide, they provide the all-important advantages of fast, complete extinguishment . . . *without damage to plant and equipment by the extinguishing medium.*

Today Cardox is concentrating on (1) Fire Extinguishing Systems needed to insure more effective "fire power" for our Armed Forces; (2) plans to increase the efficiency of fire protection, both today and after the war.

If you would like more information, write on company letterhead for Bulletin 1934.

CARDOX CORPORATION
BELL BUILDING • CHICAGO 1, ILLINOIS

District Offices in **New York • Washington Detroit • Cleveland • Atlanta • Pittsburgh San Francisco • Los Angeles • Seattle**

How Cardox Systems Protect War Industries

- Timed discharges, as needed, through built-in piping systems . . . supplied instantly from a single storage unit holding tons (if required) of liquid Cardox CO_2.
- Mass discharge of Cardox CO_2 "knocks out" fire, by . . .
- Reducing oxygen content of the atmosphere below the concentration necessary for combustion, and . . .
- Cooling combustibles and fire zone below ignition temperature . . .
- Extinguishing fire quickly and completely *without* damage from extinguishing medium.

CARDOX—CO_2 Systems with Enhanced Fire Extinguishing Performance

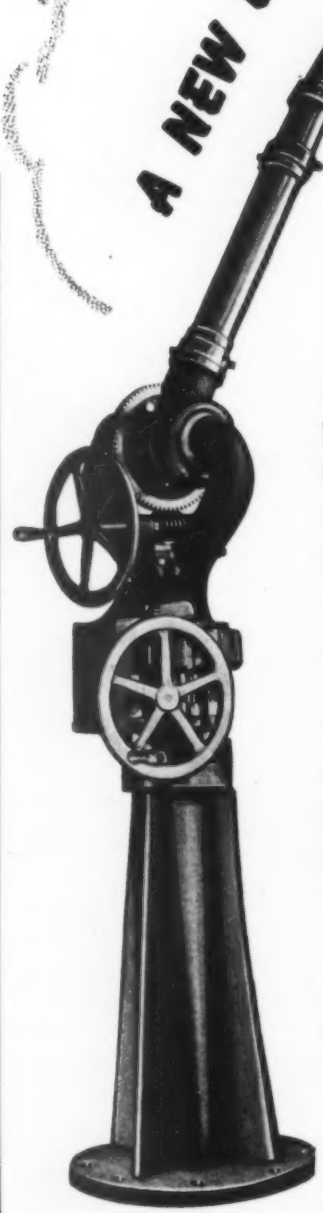
A. Uniformity of CO_2 characteristics.
B. Extinguishing medium with uniformly greater cooling effect.
C. Accurate projection of CO_2 through greater distances.
D. Timed discharges, as needed, through built-in piping systems . . . supplied quickly from a single tank holding tons of liquid Cardox CO_2.

MASS DISCHARGE OF CO_2 · ENHANCED COOLING EFFECT · CENTRAL STORAGE UNIT · AMPLE CO_2 RESERVE · ENGINEERED SYSTEMS · MANUAL OR AUTOMATIC CONTROL

CARDOX

NON-DAMAGING FIRE EXTINGUISHING SYSTEMS

A NEW DESIGN COMES OUT OF THE WAR



Chosen by our Government for its superiority under tests, this PERMANENT MOUNTED TURRET NOZZLE, designed by EASTMAN, is of sturdy bronze construction with mounting base of cast iron.

We are now able to offer this unit for civilian use for fire boats, for the protection of large warehouses, lumber yards and for roof pipes.

In place of cast iron base, unit can be furnished with stand pipe and siamese fittings.

★ *For further information write.* ★

SAMUEL EASTMAN COMPANY, Inc.
CONCORD, N. H.

WHAT'S BURNING?

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of February, 1944. These figures, compiled from the telegraphic reports, are based on estimates made at the time and are subject to later investigation and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent losses in thousands of dollars.

Month Ending February 29	Losses in Thousands of Dollars
Winchester, Ind.—Masonic Bldg., housing also a drug store, grocery, variety store, damaged	80
Forest City, N. C.—Doggett Motor Co. bldg. at Henrietta destroyed	50
Norwich, Conn.—Mill structure in Trading Cove section, occupied by Ace Woolen Mill and Best Value Cap Co. destroyed.	225
Weeksbury, Ky.—School destroyed	50
Bowdoinham, Me.—Cattle barn, five miles out, destroyed	50
Crisfield, Md.—Christy Ice Co., ice and seafood plant, destroyed	250
Jamestown, N. Y.—Three-story bldg. housing Printz Clothing Co., Main Street bldg. and adj. structures damaged	50
Union City, N. J.—Store and dwelling damaged	50
Bainbridge, N. Y.—Bldg. of casein div. of Borden Co. damaged	425
Portland, Ore.—Plant of Iron Fireman Mfrs., with a war contract for marine engines, destroyed	2000
Stratford, Conn.—New bldg. being erected at the Chance-Vought plant of United Aircraft Corp. damaged	200
Louisville, Ky.—Louisville Fire Brick Works destroyed	50
Kodiak, Alaska—Kodiak Bottling & Candy Factory destroyed	80
Hammond, Ind.—Public Service Coordinated Transport Garage damaged	125
Winnipeg, Man.—Plant of Fort Garry Dyers & Cleaners Co. damaged	60
Canso, N. S.—High school bldg. and post office destroyed	80
Ottawa, Ont.—Dwelling of H. S. Southam damaged	50
Ottawa, Ont.—Warehouse of Capital Storage Co. damaged; adj. firms of Wilson & Keith and Alexander Fleck, Ltd., also suffered damage	115
Uxbridge, Ont.—Uxbridge Woolen Mill destroyed	115
Easton, Me.—Storehouse of F. H. Vaising, Inc., destroyed	125
Waseca, Minn.—State Theatre destroyed	50
Sodus, N. Y.—Arcade Bldg., including Capitol Theatre and office of Sodus Record, destroyed	170
The Dalles, Ore.—Barn "Swan", used as defense machine shop; Columbia river tug "Winquatt" destroyed	80
Lancaster, S. C.—Sanitary barber shop, McConnels-Myers dry goods store, a storeroom used for storing machinery of the Springs Cotton Mills, Duke Power Co. office housed in bldg. in Springs block destroyed; Robinson-Cloud dept. store and Bucklew's ten cent store extensively damaged	100
Toronto, Ont.—Thirty-three training planes and two large bldgs. owned by Leavens Bros. destroyed	350
Kansas City, Kan.—Bd. of Education shops damaged	50
Kalamazoo, Mich.—U. S. Foundry Corp. bldg. destroyed	125
Friend, Neb.—Grain elevator destroyed	80
Paterson, N. J.—Benson Garage destroyed	60
Cadiz, Ohio—Cadiz United Presbyterian Church destroyed	80
San Francisco, Cal.—San Francisco Sports Center containing thirty-eight bowling alleys and other game equip.	225
Jackson, Tenn.—City Lumber Co. yard destroyed	80
Zurich, Ont.—Planing mill and lumber stocks of F. C. Kalfliesch & Sons destroyed	60
Farmington, N. H.—Dole-Waldron Shoe factory, damaged	80
Deer Park, Wash.—Keely Bldg. and three mercantile companies damaged	60
Carlisle, Pa.—Atlantic & Pacific Tea Co. super market destroyed	50
Ottawa, Ont.—Shaffers Dept. store damaged	125

Tehachapi, Cal.—Four classrooms, library, cafeteria and gymnasium of Tehachapi High School destroyed 80
Lafayette, Ind.—Plant of Nat'l homes Corp. damaged 225
Canal Point, Fla.—Wiliits and Royal gen'l stores in South Bay destroyed 50
Monroe, Mich.—Quick Storage Co. and Loeffler Auto Repair Shop destroyed .. 50
El Jean, Ohio—Main bldg. of Altman's mills, including six freight cars on siding filled with corn and wheat, destroyed ... 170
Mansfield, Ohio—Bldg. of Quality Furniture Store and three story bldg. occupied by four stores and three offices, destroyed 500
Pittsburgh, Pa.—Murdoch Chevrolet garage destroyed 50
Roslyn, Wash.—Knights Pythias bldg. and Rose theatre destroyed 80
Huntington, W. Va.—Miller Ritter bldg., housing four clothing stores, two shoe shops, a finance establishment, a bakery, a drug store, a sporting goods shop and offices, destroyed, and several adj. bldgs., including a five-story bldg. occupied by Bradshaw-Diehl Dept. Store damaged 425
Albion, N. Y. — Woods and Sprague Milling Co. plant damaged 60
Rochester, Pa.—Rochester Box & Lumber Co. plant destroyed 125
Camp Campbell, Ky.—Motor repair shop destroyed 80
South Quincy, Mass.—Old Colony Crushed Stone Co. damaged 170
Hamilton, Ont.—Wunder Furniture store damaged 80
Standard, Calif.—Machine shop of Pickering Lumber Co. destroyed 60
Des Moines, Ia.—Montgomery Ward Co. warehouse damaged 50
Red Bluff, Calif.—State Theatre destroyed 170
Chicago, Ill.,—Bd. of Trade Cleaning & Tailor Shop damaged 80
Seymour, Ind.—Main bldg. of Farmers Cooperative Elevator Co's grain elevator destroyed 50
Pittsburgh, Pa.—Agricultural hall in South Park destroyed 125
Caryville, Tenn.—Bldgs. housing fifteen business concerns on Main Street destroyed 80
Williamsburg, Ia.—Winborn Hatchery & Produce Co. destroyed 50
Tell City, Ind.—Half of the three-story Tell City Furniture Co. factory destroyed 225
Jackson, Tenn.—City Lumber Co. damaged 80
Montreal, Que.—Astor Grill damaged ... 50
Huntsville, Ont.—Huntsville Trading Co. and hardware store damaged 125
Montgomery, Ala.—Auto Parts and Tire Co. destroyed 50
Indianapolis, Ind.—The American Paper Stock Co. damaged 50
Huntingdon, Ky.—Ten stores and fifty-five offices in main business block of city destroyed 425
Keego Harbor, Mich.—Bldg. containing Keego Harbor drug store and Keego hardware store destroyed 60
Flint, Mich.—Flint Lumber Co. finishing mill on Flint River at Grand Trunk tracks destroyed 60
Charlotte, Mich.—McGrath-DeFoe Publishing Co. plant destroyed 60
Dayton, Ohio—Partly completed warehouse bldg. at new Army Signal Corps depot on Wilmington Pike destroyed 80
Sandusky, Ohio—Trailer and tractor containing naval guns destroyed 80
White River Jct., Vt.—Dutton and Fellows bldg. destroyed 50
Earle, Ark.—Municipal Water Plant, Electric Power & Light Co. and Delta Ice Plant damaged 80
Red Bluff, Cal.—State Theatre bldg. housing the Elks' Club, highway patrol office, U. S. employment office and several shops damaged 170
North Kansas City, Mo.—Grain elevator of Larabee Milling Co. destroyed 1275
North Manchester, Ind.—Hayes Lautzenhiser Community Club, C. E. Brady Men's clothing store and Fashion shoe store destroyed; Lawrence Bank bldg. and Belsite candy kitchen damaged 80
Greensburg, Ky.—Theatre and four adj. bldgs. damaged 60
Nashua, N. H.—Spear block owned by Woolworth Co. damaged 225
Cleveland, Ohio—Upjohn Co. and A. Gordon Furniture Co. destroyed 225
Cleveland, Ohio—Plant of Monarch Cap Screw & Mfg. Co. destroyed 125
Montreal, Que.—Gourock Rope & Canvas Co., along with stock of rope, twine, canvas and marine supplies, destroyed 250
Salyersville, Ky.—Five frame bldgs. occupied by four business establishments destroyed 80
Detroit, Mich.—Fisher Wall Paper Co. store damaged 80

AMERICAN-MARSH PUMPS

Auxiliary Booster Pumps for Motorized Fire Apparatus

Delivery 250 GPM to booster tank 35 feet above pump.

Only one moving part in pump—no metal-to-metal contact.

Exhaust type primer—not—necessary to fill pump with water before priming.

Automatic priming in 15 seconds on lifts to 20 feet—reprimes without attention.

Ideal for pumping out basements and the like—saving wear on expensive apparatus.

Air cooled, four cylinder engines with roller bearing mounted crankshafts.

Freezing of pump prevented by heat from the engine.

Manufactured by the builders of the well-known and time-tested Barton-American line of truck-mounted fire pumps.

AMERICAN-MARSH PUMPS, INC.

Battle Creek, Michigan, U. S. A.

Pumps—and pumps only—since 1873

Always Ready—
QUAKER

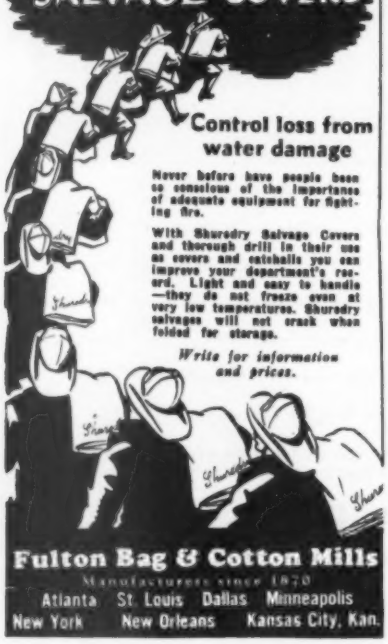
CHEMICAL
•
FORESTRY
•
SUCTION HOSE

QUAKER QUALITY

REG. U. S. PAT. OFF.

QUAKER RUBBER CORPORATION
Main Office & Factory: PHILADELPHIA
NEW YORK • CLEVELAND • CHICAGO • HOUSTON
Western Territory
QUAKER PACIFIC RUBBER COMPANY
SAN FRANCISCO • LOS ANGELES

USE
Shuredry
SALVAGE COVERS



Control loss from water damage

Never before have people been so conscious of the importance of adequate equipment for fighting fire.

With Shuredry Salvage Covers and thorough drill in their use as covers and catchalls you can improve your department's record. Light and easy to handle—they do not freeze even at very low temperatures. Shuredry salvages will not crack when folded for storage.

Write for information and prices.

Fulton Bag & Cotton Mills
Manufacturers since 1870
Atlanta St. Louis Dallas Minneapolis
New York New Orleans Kansas City, Kan.

CLASSIFIED ADVERTISING

Bids Wanted, For Sale and Help Wanted, $5 per inch. Position Wanted, $2.50 per inch

WANTED SALESMEN

Fire Equipment and Uniform salesmen to sell on the side Morning Pride Protected Rubber Firecoats, with Wing Freedom Sleeves, Chest Protector, Face Protecting Collar, also Firepants and Mitts. Write Morning Pride Mfg. Co., 1986 Home Avenue, Dayton 7, Ohio.

CHIMNEY POWDER

No need to send men on the roof for chimney fires. Has-Mor Soot Destroyer not only puts the fire out, it continues to work until it cleans the chimney, making it unnecessary to go back to another chimney fire. Put up in handy packages. Agents wanted. Harry S. Morgan, 52 Broad St., Johnson City, N. Y.

FOR SALE

1 Seagrave's tractor-trailer excellent condition—hook and ladder complete. Albert Nivert & Co., Scranton, Pa.

POSITION WANTED

Former Fire Chief, Plant Protection experience, 25 years total service as fire hazard, fire prevention and fire protection inspector in New York City. Married, age 50. Desires connection where this experience could be utilized. Leonard G. Genovese, 455 Beach 72nd St., Arverne, N. Y.

FOR SALE
FIRE DEPARTMENT SUPPLIES

Portable Pumps, Floodlight Generators and systems, Double Jacket Fire Hose, Booster Hose, Coats, Helmets, Masks, Fog Nozzles, Sirens, complete line of Fire Department supplies. Box 40, c/o FIRE ENGINEERING, 24 W. 40th St., New York 18, N. Y.

Islington, Ont.—The Kingsway Lambton United Church destroyed..... 50
Detroit, Mich.—Half of a two-story bldg. housing offices of the Willis-Wade Lumber Co. damaged..... 50
New Orleans, La.—Liquor house of Vivian J. Gelpi & Co. and Commercial Warehouse damaged..... 50
Napanee, Ont.—Five business premises destroyed 80
San Diego, Cal.—Sanitary Laundry and Dry Cleaner plant destroyed..... 150
St. Louis, Mo.—Purex Corp., manufacturer of washing and bleaching compounds, destroyed 110
Great Falls, Mont.—A. C. M. clubhouse and bowling alleys on Smelter hill destroyed. 50
Atlantic City, N. J.—Kenepac Apartments damaged 125
Lisbon, Ohio—Methodist Church destroyed 50
Lebanon, Ind.—The Williams Garage bldg., used as a warehouse by several firms destroyed 50
Calgary, Alta.—Douglas block, housing Royal Bank of Canada, ten suites, and Wilson's electric shop, damaged..... 60
St. Albans, W. Va.—Davison Brothers' poultry farm and hatchery destroyed.. 80
Kaukauna, Wis.—Sangamon Paper Mills, destroyed 225
Louisville, Ga.—Fire in Barstow Junior High School erroneously listed in December fire loss as having occurred here, occurred in Barstow, Ga.

Mystery Fire Consumes Cab of Fuel Truck

The entire cab of a new two-ton coal truck was consumed by fire in a mystery blaze recently at the garage of the Thomas J. Fannon and Sons, fuel company in Alexandria, Va., without attracting the attention of fire control officers or passersby.

The truck is believed to have burned sometime between 8 P. M. on January 26 and 7 A. M. the following morning when workers opening the locked garage found only a pile of stone-cold ashes under the truck and the cab in ruins.

Parked in the 70 by 40 foot structure near the truck was a 1,000-gallon fuel oil truck which had a partially filled tank, a private car, some oil burner parts placed within three feet of the burning vehicle and some combustible materials within five feet above the cab.

Although the garage was completely free of smoke when opened, the inside fittings of the cab including the seats were completely demolished and the fire had evidently been extremely intense because the glass in the windows was melted and the exterior of the truck was burned.

In addition, all of the gasoline in the tank had been consumed, apparently by slow, torchlike flames, without causing an explosion. The engine was not damaged and the tires were free from injury.

Officers of Chemical Fire Extinguisher Association

At the annual meeting of the Chemical Fire Extinguisher Association held March 3 at the Hotel Sherman, Chicago, Ill., Arthur G. Sullivan of the Buffalo Fire Appliance Corporation was elected President, succeeding Everett A. Warren of the General Detroit Corporation.

J. O. Binford, General Sales Manager of the American-LaFrance-Foamite Corporation of Elmira, N. Y., was reelected Vice-President.

H. W. Diener of George W. Diener Manufacturing Company of Chicago, Ill., was chosen Treasurer, and W. J. Parker, Commissioner.

George W. Boucher of Pyrene Manufacturing Company, N. J., and Mr. Warren were elected to serve on the Board of Directors with the above mentioned officers.

Convention Dates

Mar. 28-30—GREATER NEW YORK SAFETY COUNCIL. Annual meeting, Hotel Pennsylvania, New York, N. Y.

May 8-11—NATIONAL FIRE PROTECTION ASSOCIATION. Annual meeting, Philadelphia, Pa. General manager, Percy Bugbee, 60 Batterymarch Street, Boston, Mass.

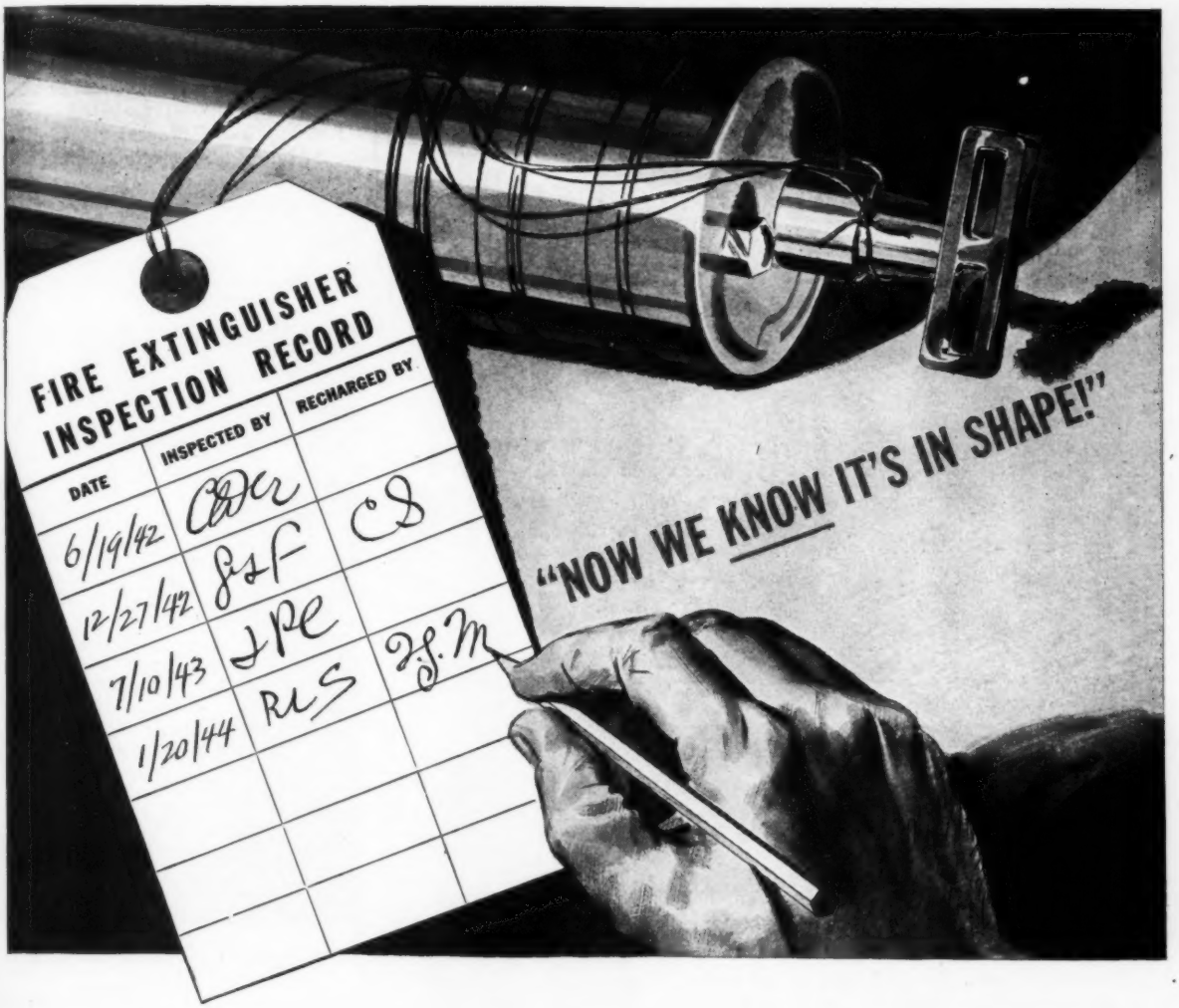
May 22-24—NEW YORK STATE FIRE CHIEFS ASSOCIATION. Annual meeting, Utica, N. Y. Secretary, Chief Henry Drake, Clinton Corners, New York.

Aug. 7-12—PENNSYLVANIA FIREMEN'S TRAINING CONFERENCE. Annual meeting. Lewistown, Pa.

Aug. 15-17—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. Annual meeting. Secretary, Chief Jay W. Stevens, Merchants Exchange Building, San Francisco, Cal.

Aug. 22-25—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual meeting. Grand Rapids, Mich. Secretary, Chief Daniel B. Tierney, 8 Robbins Road, Arlington, Mass.

Oct. 2-4—INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. Annual meeting. Boston, Mass. Secretary, Irvin Shulsinger, 8 East 41 Street, New York, N. Y.



Make sure your extinguishers are ready for action

. . . free book tells how

Your fire-fighting equipment may stand unused for years—we hope it does! But when it *is* needed against real fires, it must operate instantly at top efficiency. Thorough examination at regular intervals is the only way to make sure that your fire-fighters are *always* ready to protect your plant.

To help you organize your own extinguisher maintenance system, Walter Kidde & Company has issued a booklet. It describes in simple, non-technical language the various types of extinguishers, tells which kind you need and how many of them, how often to inspect and recharge them. It shows how to mark equipment and fire stations, suggests record forms. Write for your free copy of this book. Ask for "Inspection and Maintenance of First Aid Fire Extinguishers."

Kidde

WALTER KIDDE & COMPANY, INC., 357 MAIN STREET, BELLEVILLE, N. J.

MIDWESTERN

Firemen's Combination

SUIT

RUBBER or CANVAS TYPE

Standard in Many Cities All Over America

The Coat . . .

Midwestern's No. 101 Fireman's coat is highly serviceable and popular in the larger municipal departments throughout the country. Flexible elastic inner sleeve for wrist to keep out water, cold and sparks; adjustable collar strap, detachable wool lining, Midwestern Safety snaps, two outside pockets, 6-inch storm flap and many other fine Midwestern qualities.

The Pants . . .

These Midwestern Bunker Pants are equipped with a removable wool lining which has safety snaps that cannot catch on anything. Sturdy construction, reinforced crotch for pole sliding. These pants together with coat illustrated above are Midwestern's outfit No. 101.

See your local Midwestern distributor for prices and literature, or write the factory.

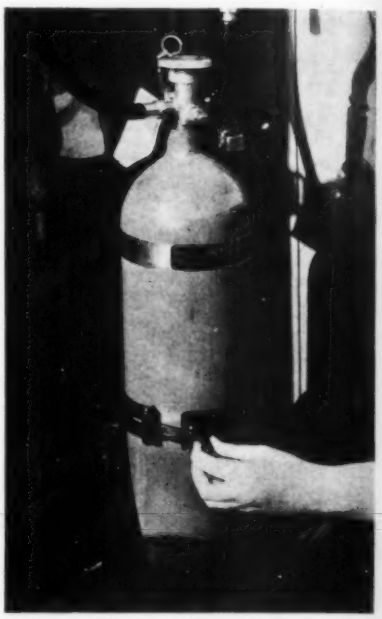
This wool lining can be added to any Midwestern Bunker Pants at a small additional cost.

MIDWESTERN MFG. CO.
MACKINAW, ILL.

Manufacturers' Announcements

Running Board Bracket for Carbon Dioxide Fire Extinguishers

A new bracket is being manufactured by Walter Kidde & Company, Inc., for fire truck running boards, to hold securely carbon dioxide fire extinguishers of two of the most popular sizes. Strongly constructed of stamped steel,



Walter Kidde's New Running Board Bracket

the bracket is provided with bolt holes for base or side mounting. In the base the elongated mounting holes permit mounting dimensions varying from five to five and one-half inches in diameter. An adjustable quick-release latch clamps either size extinguisher firmly in place, with the bracket accommodating ten and fifteen-pound capacity extinguishers, the diameters of which may vary from 6¼ inches to 6⅞ inches.

The new bracket is about half as heavy as older models, and will replace four different malleable iron brackets.

Walter Skillin Appointed Vice-President

Mr. Harold W. Harwell, President of Great American Industries, Inc., Meriden, Conn., has announced the appointment of Mr. Walter F. Skillin as a vice-president of the corporation. Mr. Skillin, formerly chief engineer for Chandler-Evans Division of Niles-Bement-Pond Company, South Meriden, Conn., assumed his new post February 1, and will be located at the general offices of the corporation in Meriden, Conn.

Mr. Skillin received his training in engineering with General Electric's Lynn, Mass., and Schenectady, N. Y., plants. He spent six years on the engineering staff of the Fafnir Bearing Company, New Britain, Conn., before going to Chandler-Evans.

Promotions Announced

Several promotions of sales and advertising personnel of the Pyrene Manufacturing Company, Newark, N. J., manufacturers of fire extinguishers and tire chains, have been announced by George H. Boucher, General Sales Manager.

Under these advancements Nelson Bauer, Newark District Manager since 1929, becomes Assistant General Sales Manager. Mr. Bauer joined Pyrene's Research Department in 1922, later served as production superintendent of the company's tire chain plant and entered the Sales Department in 1928.

Truman Young, Assistant Advertising Manager, assumes the responsibitities of Advertising Manager. Mr. Young joined Pyrene in 1933 as a member of the Advertising Department. He continues as Advertising Manager of the Pyrene affiliate, the C-O-Two Fire Equipment Co., Newark, N. J.

New Engine-Driven Fire Pumps Announced by Fairbanks-Morse

Fairbanks Morse & Company have announced a new line of gasoline engine-driven fire pump units in capacities of 500, 750, and 1,000 gallons per minute to be used as standby units operated by gasoline engines in the event electric power or steam pressure is not available.

Some of the features claimed by the manufacturer are: quick and reliable starting comparable to automobile starting; full engine developed horsepower available in a minimum of time; may be equipped for automatic operation starting from pressure switches or thermostats and economical cost contrasted with larger marine type engine-driven fire pump units.

Bulletin No. 5813-Fs fully describing this new line of fire pumps may be had upon request from the manufacturer, 600 S. Michigan Avenue, Chicago 5, Ill.

Recharging Instructions for Carbon Dioxide Extinguishers

A new booklet on "Recharging Instructions for Carbon Dioxide Extinguishers," has been published by the C-O-Two Fire Equipment Company, Newark 1, New Jersey, and made available to its field service agents and recharging stations. The booklet, which has been made up in pocket size, is illustrated with detail drawings of the equipment required for recharging and the procedure to be followed in recharging both system cylinders and portable extinguishers made by the C-O-Two Company.

Copies of the booklet will be sent on request to those with facilities for recharging C-O-Two equipment.

Dr. Getz in Charge of Research of Cardox

Dr. Charles A. Getz, director of the Research Division of Cardox Corporation, has been elected to fill the newly created position of Vice President in charge of Research of that company.

Dr. Getz is known in professional and scientific circles as an active member of such organizations as the American Chemical Society, Electrochemical Socity and the Special Extinguishing Systems Committee of the National Fire Protection Association.

"Start the Water"

When a roof or ladder line is being charged, the rubber lining of the hose —whether made from natural or synthetic rubber—has nothing to do with how the hose acts . . . its behavior is determined by the character and quality of its woven jacket.

At Eureka, consistently high quality cotton cord is made into jacket fabric on exclusive looms under conditions of controlled temperature, humidity and tension. This produces Eureka Multiple-Woven Fire Hose with such uniformity of weave that it will not wriggle, writhe or serpentine.

Today—while using synthetic rubber linings exclusively—Eureka continues to manufacture Eureka Multiple-Woven and other types of fire hose to standards designed to produce the finest quality in each respective grade.

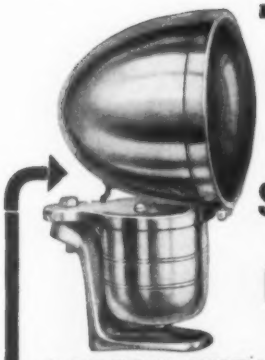
Synthetic rubber hose deserves the same protective care used to lengthen the life of natural rubber hose. If you have not yet received the valuable and important Eureka wall chart, "Directions for Care of Fire Hose," request a copy or copies today. There is no obligation and your request will be given immediate attention.

EUREKA

EUREKA FIRE HOSE

Division of United States Rubber Company

1230 SIXTH AVENUE · ROCKEFELLER CENTER · NEW YORK 20, N. Y.



NOW, SPEED TO FIRES IN SAFETY WITH AN 06 MASTER-LIGHT!

Chief, let this light show you that "Wig Wag MASTER-LIGHTS" mean *faster, safer, quieter* runs! Powerful sweeping red beam warns traffic 1,000 feet ahead—clears way in any weather. Fixed lamp head cannot stick in snow or sleet. Effective even in daylight!

CLEARS YOUR SIDE OF STREET

Write now for new free Fire Chief Folder illustrating MASTER-LIGHTS.

Send for free Folder NOW!

CARPENTER MFG. CO.
200 Sidney St., Cambridge, Mass.

CAIRNS

In Regulation or Drop Brim Style, 8-Comb or Solid Top. Top Grain Solid Leather.

HELMETS

All the best features of 100 years of "know how" are incorporated, including the CAIRNS Self-Adjusting Cushion Lining that grips the head and absorbs shocks.

THE FAMOUS CAIRNS ALUMINUM HELMETS ARE AGAIN AVAILABLE. ORDER NOW TO INSURE YOUR QUOTA.

We have, for immediate delivery, high-grade Turnout Coats, medium weight Rubber Boots, Fire Axes, and regulation Caps. And you'll need the Cairns Loose-Leaf Fire Record Book, the Loose-Leaf Secretary's Record Book, and Secretary's Forms, Certificates, etc.

Write for Catalog 30A

CAIRNS & BROTHER

Outfitters to Firemen Since 1836

444 LAFAYETTE STREET NEW YORK

WAR FARE

Alarms and Discussions Clipped and Culled from the War News of the Day, of Interest to the Fire Service.

Yanks Fight Fire "Down Under"

Beach homes, week-end houses and a seaside park were saved by American soldiers in Wellington (N. Z.) who fought a raging brush fire started by a carelessly dropped match. This was revealed when residents of the seaside resort sent thanks to newspapers for the troops' prompt action. Two men in a jeep discovered blaze, sent in alarm which in a few minutes brought 100 men with shovels and fire-fighting apparatus. They fought fire for two hours.

* * *

Good Trick—When You Do It

There was considerable ado and fuss out at the Fort Worth (Tex.) Quartermaster Depot when a mixup in flagpole halyards caused the flag to be stuck at the top of the pole.

Guards couldn't climb the pole and after various methods had been tried unsuccessfully, the Brothers were appealed to. Due to a high wind at the time and the height to which ladder must be extended, the department refused to risk ladder and men, which left Maj. Henderson, director of civil and personnel at the Depot, "up in the air". But then came inspiration! He recalled a trick from his kid kite flying days, attached a cardboard and some fish hooks to the flag line. The wind blew the hooks up to the flag after several attempts the flag was swagged and hauled down, securely fastened to the hooks. No charge for this idee, gentlemen.

* * *

War's Terrors Reach Saugus!

Saugus (Mass.) made the headlines when the town's civilian defense committee received an urgent plea from an excited woman that Saugus be declared an open city.

She said she was disturbed because the call for 200 volunteer air raid wardens had brought only 25 responses. Saugus is a few miles inland from Boston Bay and might be found on a map with a strong magnifying glass.

* * *

War Gets Screwier

Beer drinkers in Britain are being bothered by exploding glass, according to one of our Contribs. It seemed like a gag at first when the glasses filled with beer, began falling apart in the hands of the pub customers. But an expert on tumblers—not the circus kind but the beer variety—explained the glasses were apparently defective. According to this informant, if new glasses are overtoughened "a strain is set up and they could explode if put on a warm table."

Take that to heart, you stein tossers.

* * *

What Makes a Sergeant "Tops"

Speaking of top sergeants, and opportunists, just put William Breit right at the head of the list. Here's the reason: Fire broke out in the basement of a hotel in Kansas City (Mo.) quarters at the time for 196 sleeping soldiers. And so what did the top-kick do?

Instead of merely routing out his charges and marching them out, the sergeant gave them a full dress gas attack drill, taking the whole detachment to the street in formation, all with masks. Firemen agreed it was a splendid idea. The fire released sulphur dioxide from a refrigerating unit—nauseating bystanders. You can't beat an army like that!

* * *

Meanest Thief in the World!

According to Correspondent Tom Magner, the "meanest thief in the world" is in Bridgeport (Ct.). While the crew from Engine 7 on Bostwick Avenue were out battling a fire during the March of Dimes drive, the m.t.i.t.w. made off with the cardboard carton which contained dimes the firemen were collecting that some little youngster might be aided in our fight against infantile paralysis. **"If we ever catch him,"** said Capt. Jim McCormick of Engine 7, **"he'll need an undertaker instead of a doctor!"**

Fiftieth Birthday for Laboratories

Underwriters' Laboratories this year celebrates its fiftieth year of service to industry as an organization functioning for the purpose of reducing fire and accident hazards of manufactured equipment and for assuring the efficacy of fire protection equipment.

Established in 1894 for the primary purpose of investigating the electrical fire hazards of the incandescent lighting system, the Laboratories' work has expanded so that its current Listings of Inspected Appliances include 375,000 products made by over 5,000 manufacturers. These products have been investigated to determine compliance with standards—of which there are 175 or more—developed by Underwriters' Laboratories in cooperation with manufacturers of the equipment. The products are not only investigated to determine initial compliance with the standards but are also inspected periodically at factories to determine continuing conformity.

The investigation of these products is conducted at three testing stations, the main one at Chicago and two additional testing stations at New York and San Francisco, the latter two having been established primarily for service to the electrical manufacturing industry.

O. W. White, of Fabric Fire Hose, Dies

Owen W White, 50, treasurer of the Fabric Fire Hose Company of Sandy Hook, Conn., died on February 20 of a heart ailment shortly after he was admitted to the Danbury Hospital.

Mr. White, a native of Brooklyn, N. Y., was employed as an accountant in the U. S. Rubber Company, New York City. He left the employ of that company in 1939 and came to Newtown and joined the office force of the Fabric Hose Company.

He leaves his widow, Edith Allison White. The funeral was held on February 23 with burial in Sleepy Hollow Cemetery, Tarrytown, N. Y.

T. F. MAGNER.

You MUST Have 800 LBS. PUMP PRESSURE for High Pressure Fog Fire Fighting

HOME NEAR CITY SAVED FROM FIRE

High Pressure Truck Confines Damage to $1,200 On Glen Shaw Dwelling

The home of Glen Shaw, located east of East Lansing on US-16, just west of Coral Gables night club, was saved from destruction by fire early Tuesday morning as the result of the use of water under high pressure from a John Bean Manufacturing company fire truck, which makes practically all fire runs in central Michigan.

Although damage was estimated by state police at $1,200, three-fourths of the contents were undamaged and the chief loss to the dwelling was above the furnace in the center of the house.

Mrs. Shaw smelled smoke about 2:45 a. m. and called for fire companies. The Meridian township department was first to arrive, but the blaze had gained much headway and this company was handicapped by lack of water. The John Bean truck made the run from Lansing and its arrival with water, claimed to be 10 times as effective under high pressure, was credited with saving the house.

An overheated furnace was given as cause of the fire.

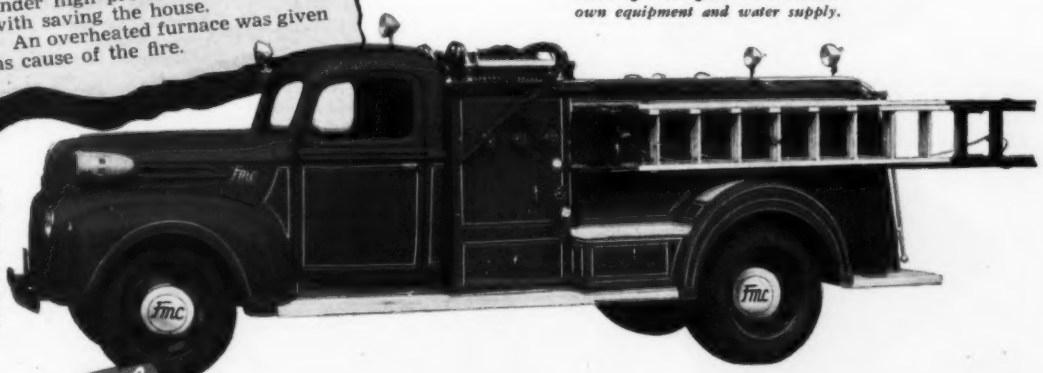
FMC Revolutionizes Fire Fighting Technique

800 lbs. pump pressure is the most efficient pressure for quick quenching with a minimum of water. If *pump* pressure is not that high, you cannot get the 600-700 lb. *nozzle* pressure needed to deliver the super-fine FMC fog that extinguishes fires so much faster—with little or no water damage or water shortage.

For that reason, the very heart of the FMC Fog Fire Fighter is its exclusive high-pressure pump. It easily maintains 600-lb. *nozzle* pressure, which breaks up water so fine that one gallon, properly used, gives you the fire-quenching possibilities of 10 to 35 low-pressure gallons.

FMC Fog Fire Fighters have proved themselves on hundreds of fires all over the country. They should not be confused with any other method of fire fighting. For complete details, write John Bean Mfg. Co., Lansing, Michigan, or Bean-Cutler Division, Food Machinery Corporation, San Jose, Calif.

FMC Fog Fire Fighter Truck. *Carries own equipment and water supply.*



FMC High-Pressure Fog Fire Fighter Saves Home. *Above account from Lansing, Mich., State Journal tells but one of hundreds of stories of the efficiency of FMC Fog Fire Fighters—all over the country.*

FMC *Original* **HIGH-PRESSURE FOG FIRE FIGHTER**

FOOD MACHINERY CORPORATION

JOHN BEAN MFG. CO., 709 HAZEL ST., LANSING 4, MICH. • BEAN-CUTLER DIVISION, 409 JULIAN ST., SAN JOSE, CALIF.

BUILDERS OF BEAN HIGH-PRESSURE PUMPS FOR OVER 50 YEARS

We shall appreciate your mentioning FIRE ENGINEERING *when writing advertisers*

VALVES
HYDRANTS
AND WATERWORKS ACCESSORIES

M & H products, including pipe line accessories, are well known for high quality of material and expert workmanship. They are made according to standard specifications and have been used for many years throughout the country. Write for Catalog No. 34

M&H VALVE
AND FITTINGS COMPANY
ANNISTON, ALABAMA

WENTWORTH
FIREMAN'S UNIFORM CAPS
UNION MADE PROMPT DELIVERY

No. 342

Wentworth Fireman Caps are made of the Highest Quality Standard Materials available and by the Best Skilled Union Craftsmen in all the New and Standard styles. Our 47 years of experience and skilled workmen guarantee you AMERICA'S GREATEST CAP VALUE in all WENTWORTH FIREMAN CAPS.

No. 441

Write direct for latest circular and prices or see your local dealer.

WENTWORTH-FORMAN CO., INC.
578b Washington St., Boston, Mass.
Manufacturers
Fireman Cap Specialists for Over 47 Years

Priorities for Fire Alarm Equipment

The present status of priorities for fire alarm equipment is indicated by the following letter sent by the War Production Board, Government Division to Mr. William H. Greenlaw, Chairman, Signal Systems Operating Methods Committee of the International Municipal Signal Association, Inc., New York, New York:

"In accordance with an agreement reached at a recent meeting between your Committee and representatives of this office, I am outlining below the points which should be covered by municipalities in the submission of requests for extensions of present alarm systems. I feel that this will apply equally to the alarm systems used by fire and police departments.

"1. A diagram of present systems, preferably on a city map, showing present locations and proposed extensions.

"2. A statement as to the total amount of material involved, including cable, wire, boxes, etc.

"3. An indication of whether any of the above material is on hand, and, in the case of cable and wire, whether the installation has already been made.

"4. Any other general information as to the character of the area to be served by the new installation and the number of telephones which could be used as an alternate means of communications.

"5. Any other pertinent information regarding the need for the new installation.

"It does appear logical to approve urgent requests for installations of boxes where a minimum of other critical materials, principally cable, is involved.

"Sincerely yours,
"Malcolm G. Bardwell, Acting Director
"Government Division
"By: Louis W. Lipscomb, Chief
"Public Protection Branch"

Used Army Trucks Available for Mounting O.C.D. Equipment

The Office of Civilian Defense, at Washington, D. C., issued the following notice on February 18, 1944.

TO: Regional Directors and Assistant Regional Directors in Charge of Protection.

FROM: General U. S. Grant, 3d, Chief, Protection Branch.

SUBECT: Additional Information Regarding Surplus Army Trucks for Mounting Office of Civilian Defense Auxiliary Fire Equipment.

Special Distribution Instructions: To State and local Defense Councils.

1. Supplementing and revising Notice of January 15 on the above subject, the following information is supplied for the guidance of all concerned.

2. The War Department is in process of turning over to the Treasury Procurement Office a large number of cargo vehicles of Model 1939 and before. These vehicles have all been inspected and declared serviceable but "uneconomical for repair" and are to be sold "as is." While no guarantees are issued, it will be found that in the great majority of cases the vehicles will be quite satisfactory for the purposes intended. Regional Offices may obtain information regarding the number and location of such vehicles by contacting the Ordnance Officer of the Service Command in which they are located.

3. Communities may get an opportunity to purchase these vehicles for their OCD organizations in the following manner.

a. Certify to the nearest Treasury Procurement District Office by letter that the vehicles are to be purchased by a tax-supported organization and that title is to remain therein.

b. Certify in the same manner that the vehicle is needed for the purpose of mounting OCD fire equipment.

c. Contact the nearest Treasury Procurement District Office and ascertain the location of the trucks which are presently available as well as the appropriate procedure for their purchase.

4. The certificate that the vehicles are needed and are to be used by a "tax-supported organization" entitles such application to priority of purchase behind Federal agencies but ahead of civilians and other potential buyers. Sale may be by negotiation and not necessarily on a bid basis.

5. If not already obtained, a "Certificate of War Necessity" will be needed for the operation of the vehicle after it has been obtained, but by arrangement with the Office of Defense Transportation, such certificates will be granted upon request for the purpose of operating a vehicle upon which OCD equipment is mounted.

6. It is suggested that delays in this matter be avoided because the supply of these vehicles, while apparently adequate, is limited, and they will be sold as appropriate applications are approved for them.

Spray Nozzles Solve Tough Dryer Problem

Wide sheets of fibreboard passing through a dryer in successive layers, with only a few inches between layers, have always presented a tough fire extinguishing problem because of the difficulty of reaching these spaces with water. Such a dryer at the Armstrong Cork Company in Pensacola, Florida, sustained damage amounting to more than $8,000 in a number of fires over a period of years. Open sprinklers operated by an automatic deluge valve controlled the fires but could not do a clean-cut extinguishing job. Recognizing this inadequacy of protection, the Armstrong Cork Company are to be commended on their willingness to replace this equipment and try out a new system of extinguishment.

Now when these fires break out, they are stopped in their tracks. Spray nozzles have provided the solution. Use of spray in fire protection is a comparatively new development, much of it pioneered by nozzle manufacturers and Factory Mutual engineers cooperatively in tests at our Laboratories. A spray nozzle system was installed in the Pensacola dryer. When another fire broke out recently, 180 nozzles filled the dryer with a heavy fog which penetrated between the sheets and promptly extinguished the fire. There was no interruption to production, no water stains on the fibreboard, and the only damage was one burned sheet! This is a good example of the constant development which assures manufacturers an uninterrupted flow of work even where fire hazards are difficult.

FACTORY MUTUAL RECORD.

LOOK FOR THESE FEATURES

- ★ Atlas Patented Dual Shock Absorbers
- ★ Moulded Rubber Hand Grips
- ★ Double Strength Strap Arrangement
- ★ Atlas Patented Lock
- ★ Extra-heavy Fabric Bottom
- ★ Heavily-padded Quilt

YES, because there was a life net ready to catch her! How many "on the spot" rescues are hampered or made impossible because of attendant hazards or lack of proper equipment? How many times has it been necessary to risk the lives of one or more firemen to effect a rescue? You may have to rescue more than one person at a time, maybe as many as five or six—could you do it as quickly by any other method, as you can with a life net?

The only safe, speedy and efficient rescue equipment is the LIFE NET. More and more fire departments throughout the country are coming to recognize this fact and with that recognition comes the acknowledgment that ATLAS LIFE NETS lead all others, because of the extra safety features that are standard with Atlas. Every new feature must stand the test of performance before it becomes a standard feature of the Atlas Life Net.

Make your decision now—don't wait until the emergency arrives—then it will be too late! Your greatest need for rescue equipment may be your next alarm! Will you be ready? ATLAS LIFE NETS are still available.

★ *For further information and data on ATLAS LIFE NETS and other safety equipment write to:* ★

ATLAS

SAFETY EQUIPMENT COMPANY, Inc.

26 WARREN STREET, NEW YORK 7, N. Y.

Do as thousands of fire-fighters — Wear H. S. COVER'S famous Nod & Shake

FOG-PROOF GOGGLES

Not just ordinary gas-tight, smoke-proof goggles! Water placed inside lense keeps fog off indefinitely!

SAMPLE $1.65

H. S. COVER, 68 Chippewa St., South Bend, Ind.

EDDY

Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience goes into their manufacture and they embody valuable and exclusive features.

Write for the Facts

EDDY VALVE CO.

Waterford, N. Y.

Fire Sweeps Salt Works

Fire swept the plant of the Morton Salt Company in Marysville, Mich., on January 10, causing damage estimated at $3,500,000.

The blaze is believed to have originated in a dry kiln. Borne on a strong south wind it quickly spread to the other buildings. The first alarm was sounded at 7:30 p. m.

Green and blue flames, shooting more than 100 feet in the air, were visible for miles. The colored flames resulted from the chemical composition of the salt and materials used to refine it.

First fire fighting apparatus to arrive was handicapped by lack of water pressure, a factor which was overcome only after pumpers from adjoining communities reinforced them.

The refinery had been a familiar landmark, the site having been used for the manufacture of salt for the last seventy-five years.

The plant, the largest of the Morton's five in the midwest, employed approximately 300 persons and produced about 250,000 tons annually.

Fire departments from Port Huron, St. Clair and the U. S. Coast Guard, joined by auxiliaries from several surrounding communities, aided the Marysville Fire Department under the command of Chief James Nelson, in battling the flames throughout the night.

National Board Commended by Navy

In appreciation to the National Board of Fire Underwriters for providing professional services gratis, Rear Admiral Ben Moreell, Civil Engineer Corps, U. S. N., Chief of the Bureau of Yards and Docks, on January 6 presented a Bureau commendation to Mr. Mallalieu of that organization.

The commendation was directed to the National Board, "for outstanding services rendered to the Bureau of Yards and Docks in furtherance of the Navy war construction program."

Rear Admiral Moreell noted that under its contract, the National Board of Fire Underwriters, together with its affiliated organizations, undertook to survey and advise on the adequacy of the fire protection facilities of not only Navy establishments, but shipyards and other firms supplying the Government with the supplies and implements of war.

The contract provided the Government with this service for one dollar. Without any Government compensation whatever some 112 field engineers have surveyed 431 properties in 25 states. These included 202 Navy shore establishments, 197 ship shipyards, three hotels and twenty-nine schools.

As a result of these surveys the Navy was enabled to remove or correct any fire hazards which were found.

A Fire Fighting Family

Fire Chief G. Ronald Gehrig of the Mount Morris (N. Y.) Fire Department is serving his fifth year as chief of this volunteer organization.

Chief Gehrig, who was the youngest fire chief in Western New York when first elected to this position, comes from a fire-fighting family. His brother, Kenneth, is chief of the Jamesville (N. Y.) Fire Department, and their dad, Frank W. Gehrig, is president of the Active Hose Company of Mount Morris. His father-in-law, A. J. Porter, is retired chief of the Sonyea (N. Y.) Fire Department, and a cousin, John McCarthy, is retired chief of the Corning (N. Y.) Fire Department. Another cousin is Lieutenant Erwin Schupmehl, also of the Corning Fire Department.

Chief G. Ronald Gehrig

The Mount Morris Fire Department is made up of three companies, the Living Stream Hose Company, Active Hose Company and the Seymour Chemical Company. The department is equipped with two modern pumper trucks, one capable of pumping 200 gallons per minute and the other 500 gallons per minute. The department also has 2,200 feet of 2½-inch hose and an up-to-date alarm system.

FRED BEUERLEIN.

Fire Sweeps Fort Wayne Warehouse

A spectacular five-alarm fire broke out shortly after 7 a. m. on January 24th in a storage depot at Fort Wayne, Mich., destroying automotive spare parts valued by officers at $2,000,000.

The equipment was part of the reserve supply which is being built up by the Service Forces in anticipation of the needs of invading armies in Europe and the Pacific.

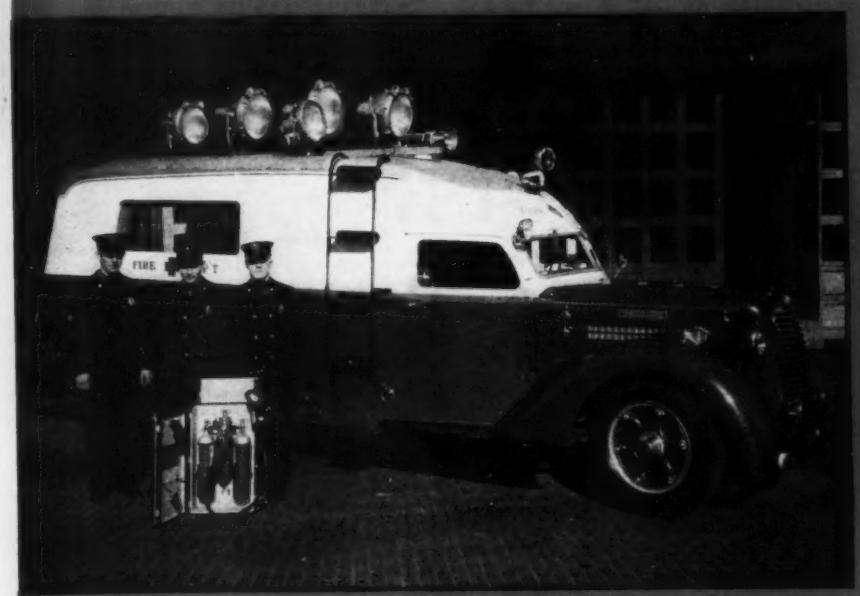
The fire started in a huge wooden storage building and fanned by a stiff wind, spread within a few minutes to a nearby building. One hour after the fire started, the first building was a mass of smoking ruins.

The fire was discovered by civilian workmen when they opened the doors of the storage building at 7 a. m. The depot fire equipment and all the personnel of the post—officers, enlisted men and civilians—were set at work.

Five fire alarms were sent in to the Detroit Fire Department, bringing in response a major part of the fire equipment on the west side of the city. The fire boat John Kendall also was sent to fight the blaze.

The fire boat had a major role in bringing the flames under control and in preventing the spread of the fire. Ten hose lines ran from the boat alone.

SAVING LIVES AT OMAHA



CHIEF D. A. O'CONNOR, progressive head of the Omaha Fire Dept.

★

Photo at left—Up-to-date Omaha rescue squad E & J equipped

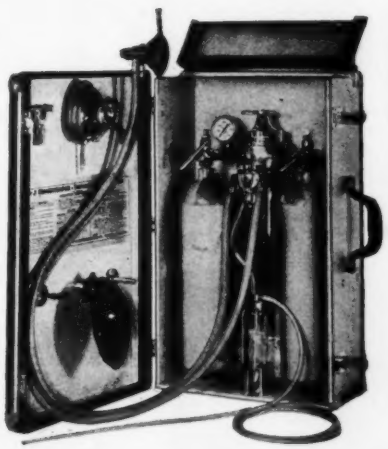
Again experience proves the merits of

The E & J RESUSCITATOR INHALATOR and ASPIRATOR

WHEN it comes to selecting resuscitation equipment, the powers that be of the Omaha, Nebr., Fire Department believe that the proof of the pudding is in the eating. It means something, then, that the E & J is preferred after years of experience.

The Omaha Fire Dept. Rescue Squad, which went into service in June 1936 with one resuscitator, now carries two of these machines. Each chief's car also carries one — making six in all. Since its start, the squad car has responded to 1,082 resuscitation calls. In 742 of these cases, the persons involved were benefitted or revived. Says Omaha's progressive Fire Chief, D. A. O'Connor — "There is no question but what the squad and its equipment is rendering valuable service and saving lives".

Wherever you go, from one end of the country to the other, you'll find the modern E & J automatic breathing machine winning first choice. Ask any user about his experience and you'll understand why E & J is so widely preferred.



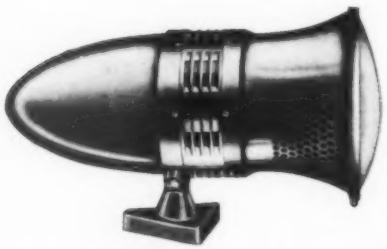
★ *For further information write any of our distributors listed below.* ★

E & J MANUFACTURING CO., GLENDALE, CALIF.

Philadelphia · New York City · Pittsburgh · Detroit, Mich. · Boston · Chicago

3032 W. 25th Ave., Denver, Colorado

Pioneers and Specialists in Mechanical Artificial Respiration



★

Combines Siren and Flasher Beacon!

★

THE SIRENLITE

THIS precision built siren combines a shrill, penetrating siren with a power-attention-getting red flasher beacon. A combination that will clear the way even through the heaviest traffic, day or night, with complete safety.

The cost of the combination is only slightly more than the cost of the siren alone and nowhere near the cost of both the beacon and the siren if purchased separately.

For your own safety get the best. This modern, dependable and streamlined SIRENLITE No. 20 is built in the world's largest siren factory and carries the guarantee of more than 40 years of exclusive siren manufacturing. Stick to Sterling and be Safe!

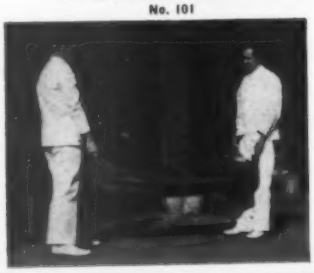
Write for detailed literature.

STERLING SIREN FIRE ALARM CO., Inc.
55 Allen Street Rochester, New York

Reeves
Reg. U. S. Pat. Office

FLEXIBLE STRETCHERS

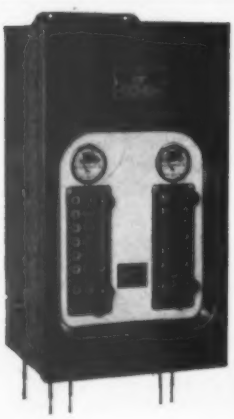
No. 101



Every casualty, no matter how slight or how serious, can be made worse by rough, improper handling. Reeves Stretchers can be used in the most inaccessible places.

If your dealer cannot supply you, write to:

A. SMITH & SON, Inc.
1237-39 RIDGE AVE.
$14.50 PHILADELPHIA, PA.



A versatile

BATTERY CHARGER

This Full-wave Tungar is a truly versatile battery charger. At 2 to 6 amperes it will handle twenty-four 6-volt batteries, or twelve 12-volt batteries, or six 24-volt batteries. At 2 to 12 amperes it will handle twelve 6-volt batteries, or six 12-volt batteries or three 24-volt batteries. It is a strong, toughly built unit designed for fast, one-day service. It will give a fast or slow charging rate or a combination of both. And it's economical, highly efficient and very easy to operate. Address inquiries to Section A144-58 Appliance and Merchandise Department, General Electric Co., Bridgeport, Conn.

GENERAL ELECTRIC

With Our Readers

(*Continued from page* 149)

two trucks, one a 300-gallon pump or brush truck and a 500-gallon pumper carrying 1600 feet of 2½-inch hose, 500 feet of 1½-inch hose and a 150 gallon booster tank to which is attached two reels with 150 feet of booster hose on each reel.

Sincerely,
James H. Oakey, Assistant Chief,
Tobyhanna Fire Department.

Activities of the Philadelphia, Pa., Fire Department

To the Editor:

The close of 1943 saw the Philadelphia Fire Department have its fourth worst year in history as far as the total number of extra fires are concerned.

During the month of December there were twelve extra alarm fires. This number was the greatest for any December. Only once before there were more than twelve extra alarm fires in a month. That was in January of 1918 when there were fifteen.

The month of December reads like this: The fourth of the month saw a bad three-alarm cellar fire with two firemen hurt, then a paint manufacturing plant on the fifth for two alarms, on the seventh a theatre fire for two alarms and with a fireman seriously injured and also a bakery fire for three alarms with a battalion chief and an acting lieutenant injured. The eighth saw a machine shop doing war work afire and another fireman injured. On the thirteenth there was a four-alarm fire in a storage warehouse and a fireman injured. On the twentieth the department answered two alarms for an apartment cellar fire. In the early morning of the twenty-third, firemen answered a three-alarm and a two-alarm fire within a half block of each other and only a few hours apart. Three firemen were injured in these fires. On the twenty-fourth another three-alarm fire in a fruit market occurred, injuring a fireman. Early on Christmas morning firemen answered five alarms for a fire in an apartment house. The janitor and a tenant were killed and four firemen injured in this fire. The last in the series occurred on the morning of the thirty-first when a six-alarm fire swept a war plant. One fireman and an acting battalion chief were injured. The chief was injured when he led a rescue party into another building next door to save the lives of four firemen who were trapped.

Ten of these fires happened in subzero weather. The month also saw several pieces of apparatus and a battalion chief's car in accidents with a battalion chief, his driver and several firemen injured.

VERITY

Oil Stove Causes Fire

Overcome by smoke in a fire which gutted an apartment in his three-family house, William B. Scee, 72, of Watertown, N. Y., died December 19. The fire, caused by an explosion of an oil stove, damaged the house considerably.

Scee was found lying on the floor in the kitchen by firemen, who used an inhalator in an effort to revive him.

SANFORD D. DEWEY.

Chief C. J. Henry Dead

Chief Charles J. Henry of the Lexington, Ky., Fire Department died suddenly at his home on February 18, after suffering a heart attack. He died within a few minutes after the arrival of the fire department first aid squad.

Chief C. J. Henry

Chief Henry had been a member of the department continuously since April 1, 1912, and previously had served as a fireman for three months in 1905. He was appointed second assistant chief on February 1, 1926, and became first assistant on June 12, 1928. On November 1, 1930, he was named head of the department.

When Chief Henry began service with the city thirty-two years ago, the department consisted of approximately forty men and was equipped entirely with horse-drawn trucks. During that time, the department has expanded and improved until it now comprises eighty-three officers and men and is entirely motorized.

Chief Henry has been a member of long standing of the International Association of Fire Chiefs, and has not missed an annual meeting in several years. Recently he was selected as the Kentucky chairman of the membership drive.

He was very active in all matters pertaining to the welfare of the Kentucky fire service, having been chairman of the Educational Committee, which made possible state firemen's training, and was at the time of his death, chairman of the Legislative Committee.

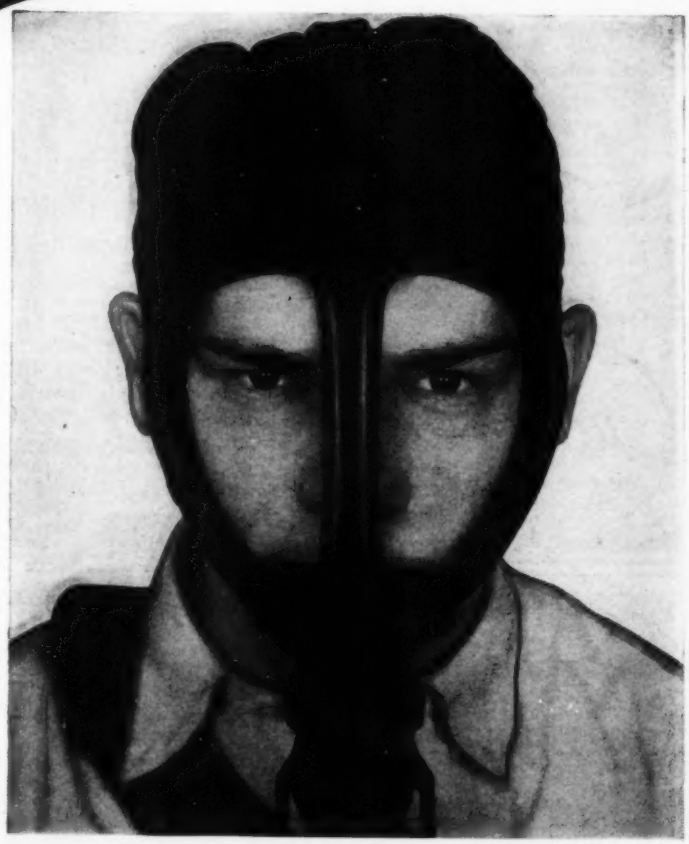
New Federal Fire Fighters Local Formed

A newly-formed union local of the Federal Firefighters Association, affiliated with the International Association of Firefighters, has been organized and chartered. The president is Mr. William C. White of the Boston Harbor Defenses Fire Department, in which he holds the title of aide to Assistant Chief J. L. Lane.

At the present time, Mr. White is stationed in Natick, Mass., at the Army Air Force Spec. Depot.

OFFICIALLY APPROVED by the U.S. BUREAU of MINES NO. 1436

ACME Full-Vision ALL-PURPOSE Type FD Gas Mask



FEATURING: Non-Distorted FULL VISION, Protection Against Carbon Monoxide, Acid Gases, Organic Vapors, Toxic Smokes, Fumes and Smoke Suffocation

ACME PROTECTION EQUIPMENT COMPANY, INC.
Manufacturers
3616 LIBERTY AVENUE Cable Address ACMEPROCO PITTSBURGH, PA U.S.A.

For Any
BOOKS
on any phase of
FIRE FIGHTING OR FIRE PREVENTION
Send your order to
BOOK DEPT.
CASE-SHEPPERD-MANN PUBLISHING CORP.
24 WEST 40TH STREET NEW YORK 18, N. Y.

HOSE BRASS GOODS
WB LINE
THE WOOSTER BRASS Co.
WOOSTER, OHIO

TRUMPET
CUSHION-BALL SHUT-OFF
NOZZLE

Play Pipes
Deluge Guns
Nozzles
Tips, and
Accessories
Couplings
SKI-Lug
GUARD LUG
Navy
Siamese
Water Thieves
Miscellaneous
Hose Fittings
Maintenance
Repair, Test
Safety and
First Aid
Equipment

DEPENDABLE "OLD FAITHFUL" GEYSER

The "Trumpet" Shut-Off Nozzle is known as the "Cushion Ball" because of the cushion effect of the metal to metal regrindable seat. The one-piece discharge throat, cracking ease and simple construction are a few of its many advantages. On your next order for Shut-Offs, be sure to specify Trumpet Cushion Ball and *SAVE* with *SAFETY*.

Write for complete information.

Any Idle Fire Equipment For Sale?

Today — right now — there are many American communities and municipalities which sorely need additional fire fighting facilities to give their citizens adequate fire protection and are unable to secure these because of war conditions.

Search your own department or fire stations for any surplus apparatus or old usable equipment and offer it for sale through the classified "Opportunities" columns of this magazine. Rates are low—only $5 per inch.

FIRE ENGINEERING
24 W. 40th St., New York 18, N. Y.

THE *New* WHEAT
Rechargeable Spotlight
MODEL 158

2500 FOOT BEAM
25000 CANDLE POWER
1000 HOURS OPERATION

Critical Materials Reduced to a Minimum to insure Availability

FEATURES
★ Positive "non-spill" Construction
★ Less expensive Operation than dry cells
★ Free use of Hands. Light carries conveniently on Shoulder Strap
★ Weighs only 92 ozs. complete
★ Simple to Charge and Water No need to take Lamp apart
★ Light can be Focused and Directed as Desired

WRITE FOR COMPLETE DETAILS
KOEHLER MANUFACTURING COMPANY, INC.
MARLBORO, MASSACHUSETTS, U.S.A.

The Round Table

(*Continued from page* 153)

layman with a little experience, and be reasonably accurate.

George Knol, Chief, Cicero, Ill.: We estimate losses to buildings and contents by fire by checking with the owner and the adjuster. Our estimates are reasonably correct.

W. J. Sudeith, Chief, St. Paul, Minn.: We only estimate fire losses where no insurance exists. Most of the estimates of the district chiefs are about fifty per cent short.

J. C. Fitzgerald, Chief, Asheville, N. C.: On all property where insurance is carried, the adjuster's losses are recorded. Where no insurance is carried, contractors' figures are used.

Sol T. Green, Chief, Gadsden, Ala.: We estimate fire losses and find they are reasonably accurate. We use insurance adjustment figures when we can get them.

G. A. Goodin, Chief, Muskogee, Okla.: We do not estimate losses to buildings and contents by fire. Loss figures are secured from insurance adjusters.

S. J. Flores, Chief, Shreveport, La.; L. B. Barnum, Chief, Phoenix, Ariz.; F. L. Campion, Chief, Fargo, N. D.; Earl A. Traeger, Chief, Minneapolis, Minn.; **L. L. Petrey, Chief, Mobile,** Ala. and Leo J. Urbanski, Chief, Saint Joseph, Mo., report that their departments estimate losses to buildings and contents by fire, that they use insurance adjustment figures when the property is insured and that they have found fire department estimates reasonably accurate.

C. A. Delaney, Chief, Lakewood, Ohio: Lakewood's fire losses to buildings and contents are estimated by the Fire Department.

Insurance adjustment figures are used only on rare occasions where the loss is such that a special study of the building or contents would be required to make a fair estimate of the loss.

We have found our estimates of fire losses to be reasonably accurate.

A. H. Lankford, Chief, Glendale, Cal.: It is the responsibility of the officer who makes out the fire report on the fire to estimate the loss to building and contents. This applies to all fires.

We have practiced this method for a number of years, regardless of whether the property is insured or not, and I would say this procedure has proved to be very accurate and satisfactory.

Joe Carmichael, Chief, Little Rock, Ark.: We experience the same difficulty as other departments in securing actual fire loss in every instance. We have on numerous occasions found that the fire loss estimated by the department is practically the same loss estimated by insurance companies.

With several adjustment bureaus located in this city, is is very little trouble to ascertain losses by fires.

We compile the building and content losses separately in the fire record book, but the annual report carries both together.

With a large number of fires uninsured, there is considerable trouble in locating property owners for a true valuation and fire loss sustained by them.

John F. Moroney, Chief, Meriden, Conn.: The fire department does not estimate the loss to buildings and contents by fire.

Loss figures, if building and contents are uninsured, are arrived at by the fire marshal, who is also building inspector. If buildings and contents are insured, we then secure the figures on the loss from agents.

In many cases where losses are estimated by fire departments, the figure on such has been much higher than the adjustments made by insurance companies. Therefore these losses are not accurately estimated.

Frank Pulaski, Chief, Boise, Ida.: We always estimate losses at large fires. If property is insured, these are changed when the estimates are received from the adjusters.

James J. Higgins, Chief, Schenectady, N. Y.: Estimates of fire damage on uninsured buildings are made by a deputy chief. We have found these to be fairly accurate. On insured property, we use the estimates furnished by the insurance adjusters.

J. J. Fitzpatrick, Chief, Pueblo, Colo.: We secure loss figures from the actual loss after it is settled. We use insurance adjustment figures when the property is insured. Our estimates are reasonably accurate.

Charles Plummer, Chief, San Jose, Cal.: We do not estimate losses to buildings and contents by fire. Loss figures are secured from the building permits where buildings are repaired. If not repaired, the figures are taken from the assessment roll. Where property is insured, insurance adjustment figures are used.

M. J. Brun, Chief, Fort Smith, Ark.: Loss figures are secured from the building inspector or fire adjuster. Insurance adjustment figures are used when property is insured.

Michael J. Martin, Acting Chief, Concord, N. H.: Insurance company figures are used to estimate losses to insured property by fire. When there is no insurance we secure the loss from property owners.

Fire Prevention Training Manual for Nurses

The Minnesota State Fire Marshal's Office has issued an eight-page pamphlet entitled "Outline of The Fundamentals of Fire Prevention Training for Nurses to be Used as a Guide by the Instructors."

This plan has received the approval of the Minnesota hospital authorities and was drawn up with the purpose in mind of making this service available to every hospital in the state, through the cooperation of the fire departments. The pamphlet has been prepared under the supervision of Newell R. Johnson, State Fire Marshal of Minnesota, and Leonard C. Lund, Deputy Commissioner, Fire Marshal Division.

Correction

On Page 33 of the January issue of FIRE ENGINEERING, under the heading of "Gas Shut-Off Valve Has Plastic Link", Lieutenant John F. Kelly was erroneously listed as a member of the New York Fire Department.

Lieutenant Kelly is a member of the Cleveland, Ohio, Fire Department.

FAST, EFFECTIVE

FIRST AID for BURNS

with modern SPRAY application!

M·S·A

FOILLE

BURN

SPRAY KIT

Combining all the advantages of Foille for burns with quick application and rapid coverage of injury, this modern Kit provides a highly-efficient spray gun which connects direct to the jar of Foille—no time wasted in mixing ingredients or making solutions—always ready for instant use! Extra jars of Foille, unit-packaged first aid dressings and accessories—including sterilized muslin sheet—make this sturdy, metal-cased Kit complete in every detail. For continued treatment and refilling of the jars keep an ample supply of Foille on hand—available in gallon bottles. Write for Bulletin No. FA-73 or send us your order—immediate shipment!

MINE SAFETY APPLIANCES CO.

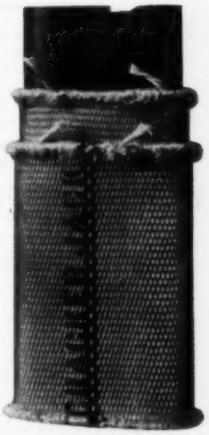
BRADDOCK, THOMAS & MEADE STREETS

PITTSBURGH, PENNA.

36 Years Experience + Vision for Tomorrow

Make "American Rubber" Products

Timed for Today's Needs



It's this long experience . . . plus our practice of always looking ahead . . . that have enabled us to meet the emergencies brought about by this global war. Experience plus Vision have enabled us to develop Ar-Polene, the American synthetic, and to use it in such a manner that, in many cases, it is superior to natural rubber.

•

Now, just as in normal times, you can depend upon "American Rubber" products for today's needs, and tomorrow's.

Since 1905 Crackerjack double jacket Fire Hose has been the standard on the Pacific Coast, and the favorite of firemen.

The

AMERICAN RUBBER

Manufacturing Co.

Factory and General Offices:

Park Avenue and Watts Street **Oakland 8, California**

"ALL AMERICAN CHOICE"
INVINCIBLE NOZZLES
PREPARE — PROTECT

Portable equipment is the watchword of today.

Buy—

INVINCIBLE NOZZLES

and enjoy the benefits derived by experience of the pioneers in the nozzle field.

Fig. 403

F. N. McINTIRE BRASS WORKS
Successors to A. J. Morse & Son, Inc.
BOSTON, MASS.
1837 - - 1941

BOYER

Headquarters for
"DEPENDABLE"
FIRE APPARATUS and FIRE DEPARTMENT SUPPLIES

★

FORTIFY FOR FIRE FIGHTING

★

BOYER FIRE APPARATUS CO.
LOGANSPORT INDIANA

Smith Chief at Troy, New York

Carl A. Smith was appointed Chief of the Troy, New York, Fire Department, following the retirement of Chief Cornelius Casey.

Chief Carl A. Smith

A veteran of World War I, serving with the United States Navy, Chief Smith has had a varied and colorful career since his appointment to the fire department on January 1, 1919.

Chief Smith became a lieutenant on April 28, 1932, and Captain on March 6, 1934. On October 4, 1935 he was appointed battalion chief.

He was instrumental in organizing Local 281 of the International Association of Fire Fighters, as well as many other locals in the nearby cities.

During one of his several terms as President of Local 281, Chief Smith instituted a loan association, whereby any member in good standing might borrow a substantial amount at a low rate of interest. Another feature inaugurated was a death benefit payable to the widow of a fireman, or the next of kin at the time of death. He was also successful in having the firemen's pension laws changed.

After the attack on Pearl Harbor, Chief Smith attended the Army Chemical Warfare School at Edgewood Arsenal. On his return home, he set up a school, where he taught thousands of people to prepare against a gas or bombing attack by the enemy.

On January 18 he was guest of honor at a presentation dinner, at which he received a diamond studded badge as a token of the high esteem in which he is held by the members of the fire department.

Booth Completes Forty Years With Underwriters

Following the great Baltimore conflagration in 1904, the National Board of Fire Underwriters organized an Engineering Department, with the purpose of advising cities as to the improvements deemed necessary to prevent conflagrations.

This year, 1944, completes forty years of that work. Starting with the organization as one of its first engineers was Geo. W. Booth, who for the past thirty odd years has been the Chief Engineer.

During this period the National Board of Fire Underwriters has inspected all cities of the United States of over 25,000 population, and some in Canada. The total of such cities reported on exceeds 450, and in all of these there have been numerous reinspections and reports.

Probably the most outstanding work brought out under Mr. Booth's supervision has been the Standard Schedule for Grading Cities and Towns of the United States, with Reference to Their Fire Defenses and Physical Conditions. This Schedule sets up the standards in water supply, fire departments, and fire alarm, and also on fire prevention codes and building codes. No treatise of this kind existed before. Its influence on the fire protection of the United States has been extremely wide, not only for the larger cities but also for the towns, villages and hamlets where protection was being improved or installed.

Mr. Booth is a graduate of Worcester Polytechnical Institute, which recently conferred the honorary degree of Doctor of Engineering upon him. He is an honorary life member of the National Fire Protection Association.

Photo by Kenneth Dow

One of the Few Remaining Volunteer Fire Companies in New York City
This is the Edgewater Volunteer Hose Company No. 1, Throgg's Neck district, Bronx, N. Y.

Questions and Answers

(*Continued from page* 150)

However, there is a limit beyond which the increase cannot go, due to the fact that the motor driving the pump cannot be speeded up indefinitely.

Theoretically if the pressure at the pump you describe was reduced to 80 pounds, the discharge should be 2,000 gallons per minute. Actually, however, such a performance could not be obtained safely due to the great increase of speed that would be necessary on the part of the motor driving the pump.

The actual maximum discharge of a pump at lower than rated discharge pressure depends upon many factors such as the pump characteristics, the motor characteristics, etc.

Freezing Points of Extinguishers

To the Editor:

What are the limitations and freezing points, if any, to carbon dioxide and carbon tetrachloride extinguishers? M. C.

Answer: Pure carbon tetrachloride freezes at approximately 19 degrees below zero F.

However, an anti-freeze agent is commonly added to the carbon tetrachloride in extinguishers to depress the freezing point so low as to make the use of these extinguishers practical in almost any climate.

Carbon dioxide freezes at —86 degrees F., and hence is satisfactory to use anywhere on the face of the globe.

Laurel, Md., Housewives Fight Fire

Shouldering heavy lengths of hose and climbing fire ladders is just an everyday job for ten Laurel, Md., women. When the siren shrieks, they drop their housework, jump into overalls and rush out to battle flames.

Ranging in age from twenty-seven to fifty-two, and including two grandmothers, members of the group have taken to fire fighting as easily as keeping house.

Fire Chief Norris Beall of the Laurel, Md., Fire Department, got the idea of having women firemen soon after the armed forces began making inroads on fire department manpower.

He suggested that about eight members of the Women's Auxiliary learn to fight fires. Ten took training and now they handle all the daytime fires with the help of any available men.

Mrs. Gertrude Beall, captain of the group and sister-in-law of the Fire Chief, said things "were pretty bad" at first when there were four or five brush fires every day. But the women soon got into the swing of things, and now they handle the huge fire trucks and heavy hose lines like trained firemen.

Captain Beall and two other women serve as drivers, while all members are qualified to give first aid. They were trained by Chief Beall and Captain Norris Beard and still drill twice daily.

The group got its first taste of smoke on a forest fire soon after they were organized. They had to carry fifty-pound backpack pumps and fire rakes.

This emblem, which identifies one of the Nation's most complete lines of department supplies, is known and respected wherever fire fighting equipment is used. It is the mark of thoroughly sound design and extremely high quality.

ELKHART BRASS MANUFACTURING CO. Inc.
Elkhart, Indiana

BETTER BADGES
than you ever got before—

For the past 64 years we have supplied the fire fighters of America with the finest badges they have ever worn.

Now — because of the government's prohibition of the use of nickel, brass, copper, nickel plating, and chromium — we are making these badges and insignia in sterling silver, sterling silver gold plated, rolled gold on sterling silver, and 14 karat gold.

Today — for just a little more, you get a sterling silver Braxmar Badge — without doubt the best badge you can buy anywhere.

Recommend Braxmar to all your fellow fire fighters and wear one yourself.

★

The blue covered catalog is the latest published but write for our new price list effective July 29, 1943. Only prices in the catalog on 14 karat gold items are still in effect. All auto plates are discontinued for the duration.

★

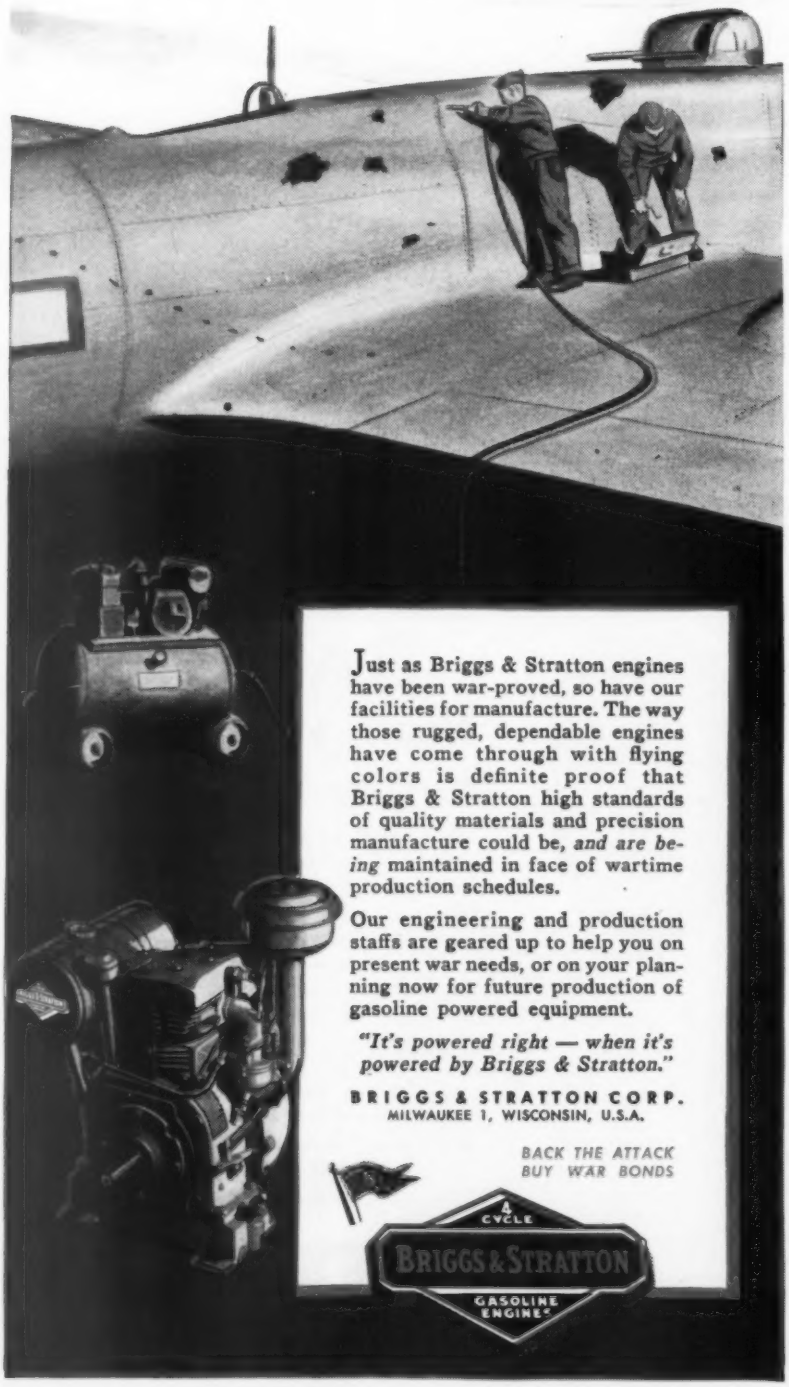
C. G. Braxmar Co., 242 W. 55th St., N. Y.
John O. Veit, Pres.

BRAXMAR BADGES

Standard for over 64 years

WHEN REPAIR CREWS *Take Over*

They're doing a great job — those ground crews — repairing damaged planes and other fighting equipment at front line bases, and everywhere. For operating riveters and other repair and assembly equipment, air compressors are powered by sturdy, dependable air-cooled gasoline engines. One more front line duty for the hundreds of thousands of Briggs & Stratton engines now "In Service".



Just as Briggs & Stratton engines have been war-proved, so have our facilities for manufacture. The way those rugged, dependable engines have come through with flying colors is definite proof that Briggs & Stratton high standards of quality materials and precision manufacture could be, *and are being* maintained in face of wartime production schedules.

Our engineering and production staffs are geared up to help you on present war needs, or on your planning now for future production of gasoline powered equipment.

"It's powered right — when it's powered by Briggs & Stratton."

BRIGGS & STRATTON CORP.
MILWAUKEE 1, WISCONSIN, U.S.A.

BACK THE ATTACK
BUY WAR BONDS

4 CYCLE
BRIGGS & STRATTON
GASOLINE ENGINES

ADVERTISING INDEX

FIRE ENGINEERING

MARCH, 1944

	Page
Acme Profection & Equipment Co.	181
Akron Brass Mfg. Co., Inc.	130
American District Telegraph Co.	136
American La France-Foamite Corp.	133
American Marsh Pumps, Inc.	169
American Rubber Mfg. Co.	183
Anderson Fire Fighting Co., Inc.	134
Atlas Safety Equipment Co., Inc.	177
Bean Mfg. Co. Division, John, Food Machinery Corp.	175
Boyer Fire Apparatus Co.	184
Braxmar Co., Inc., C. G.	185
Briggs & Stratton Corp.	186
Buffalo Fire Appliance Co.	128
Cairns & Brother	170
Cardox Corp.	167
Carpenter Mfg. Co.	174
Circul-Air Corp.	158
Cover, H. S.	170
Curtis & Sons, L. N.	163
E & J Mfg. Co.	179
Eastman Company, Inc., Samuel	160
Eddy Valve Co.	170
Elkhart Brass Mfg. Co.	185
Emerson Co., J. H.	Inside Front Cover
Eureka Fire Hose Div. U. S. Rubber Co.	173
Federal Electric Co.	125
Fog Nozzle Co.	Back Cover
Four Wheel Drive Auto Co.	Inside Back Cover
Fulton Bag & Cotton Mills	170
Gamewell Company	138
Gebauer Chemical Co.	162
General Detroit Corp.	156
General Electric Co.	150
Goodall Rubber Co.	164
Hale Fire Pump Co.	158
Homelite Corp.	159
Janesville Apparel Co.	166
Kidde & Co., Inc., Walter	171
Koehler Mfg. Co.	182
M. & H. Valve & Fittings Co.	176
McIntire Brass Works, E. N.	184
Mack Manufacturing Corp.	129
Macmillan Petroleum Corp.	128
Midwestern Mfg. Co.	172
Mine Safety Appliance Co.	183
National Foam Systems, Inc.	157
Oren Fire Apparatus Co.	139
Pirsch & Sons Co., Peter	131
Quaker Rubber Corp.	170
Republic Rubber Div. of Lee Rubber & Tire Corp.	161
Rockwood Sprinkler Co.	132
Ross Valve Mfg. Co.	160
Seagrave Corp.	137
Smith & Sons, Inc., A.	180
Smith & Co., D. B.	127
Sterling Siren Fire Alarm Co., Inc.	180
Superior Fire Equipment Corp.	162
U. S. Motors Corp.	166
Ward LaFrance Truck Corp.	126
Waterous Company	140
Wentworth-Forman Co., Inc.	176
Wooster Brass Co.	182

NEERING
NG
NG
Page
181
130
136
133
169
183
134
177
175
184
185
186
125
174
167
174
155
178
163
179
168
178
185
ont Cover
173
123
ack Cover
ack Cover
170
138
162
156
186
164
158
159
160
171
182
176
184
129
128
172
183
157
135
131
179
Rubber
161
132
160
137
180
127
nc.
180
162
164
126
168
176
182

FIRES ARE *Not Rationed*

No edict can ban or ration fires. No priorities can stifle them. They break out where and when they please . . . and their only control lies in proper fire protection equipment to minimize the losses.

FWD Fire Apparatus gets to the fire faster, safer! Precious minutes are saved! All four wheels, alive with power, grip the road for every inch of the run . . . every ounce of truck and load is converted into powered traction. There's no skidding on slippery roads . . . no hesitating on steep grades . . . no stalling in mud or snow blocked streets.

Cities and towns from coast to coast need the super-safety and plus-protection FWD Fire Apparatus assures . . . the line is complete, all types and sizes . . . rotary or centrifugal pumpers in triple or quadruple combinations, aerials, etc. . . . WRITE for literature.

FWD Model KH5—500-gallon pumper recently purchased by City of Anchorage, Alaska.

THE FOUR WHEEL DRIVE AUTO CO., Clintonville, Wis.

Canadian Factory: KITCHENER, ONT.

One of a fleet of FWD 85-foot aerial ladder trucks in service for the City of New York undergoing test by the Fire Department engineers. The aerial ladders on these trucks are of anti-gravity design and are raised by spring hoists. Less than 20 seconds are required to raise the ladder to a vertical position and extend it to its fullest height. The special FWD tractor developed for this service provides for quick acceleration, high sustained speeds and extra safety in steering control.

FWD

FOUR-WHEEL-DRIVE **FIRE APPARATUS**

• *Built by the Oldest and Original Exclusive Builders of Four-Wheel-Drive Trucks.*

"it's a good thing we used a FOGNOZL"

Fognozls extinguish almost any type of fire. Quoting from a report of the McCloskey Varnish Co. of Los Angeles, they say, "We did have a fire in our plant, in which Fognozl played a rather important part. In the five minute interval for outside assistance, the fire (varnish kettle) would have gained such headway that a very heavy loss would have occured. The fire was out by the time the fire company arrived. One man, using a Fognozl, protected the other man. Obviously we are more than completely satisfied with its operation." They, too, think it's a good thing they used a Fognozl.

GRISWOLD ORIGINAL WATER FOGNOZL

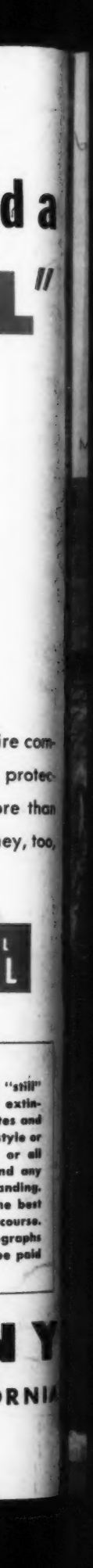
● **FOGNOZL FACTS**—PREPARE BY ACCUMULATING DATA ON THIS NEW WATER FOGNOZL FIRE-FIGHTING METHOD THAT HAS REVOLUTIONIZED OLD METHODS. FOGNOZL ACCOMPLISHMENTS ARE DAILY EMPHASIZED BY OUR ARMED FORCES
● A BROCHURE OF **FOGNOZL FACTS** WILL BE SENT, WITHOUT OBLIGATION, TO THOSE ENGINEERS OR EXECUTIVES WHO WILL SO REQUEST IT ON THEIR OFFICIAL OR DEPARTMENT LETTERHEAD.
IN FOLDER CONVENIENT FOR YOUR FILE

- PROTECTION TO PERSONNEL
  TO FIREMEN AND FIRE VICTIMS
- RAPID EXTINGUISHMENT
  A MATTER OF SECONDS
- REDUCED WATER DAMAGE
  A RATIO OF 1 TO 30 GALLONS
- ECONOMY & AVAILABLE SUPPLY
  PLAIN WATER

A PRIZE FOR THE BEST

A prize is hereby offered for the best "still" photographs showing the sequences of extinguishing fires occurring in the United States and Canada, with any of our FOGNOZLS, old style or new. We reserve the right to use any or all photographs for advertising purposes and any sent in are sent to us with this understanding. The only compensation is the prize to the best pictures. The prize? Why a FOGNOZL, of course. And in addition, in the event any photographs are used in Fire Engineering, $100 will be paid to the sender.

FOG NOZZLE COMPANY

1520 EAST SLAUSON AVENUE ● LOS ANGELES 11, CALIFORNIA

FOG NOZZLE OF CANADA, LTD., MONTREAL, CANADA